AusIMM Society | Consultants

Consultants Society Forum 2026: The Evolving Consultant – Human Insights on Emerging Technology

Speaker: Joe Cronin, Founder and CEO - Australian Droid & Robot (ADR)

Topic: Implementation of innovative remote data acquisition systems that boost operational safety and productivity

Abstract: The global mining industry is currently at a critical juncture. As deposits become deeper, lower-grade, and more remote, the demand for renewable energy minerals continues to surge. Navigating this complexity, alongside rising ESG pressures and an acute skills shortage, requires a fundamental shift toward data-driven sustainability and profitability.

Traditional, human-centered inspection methods are increasingly unsustainable. Beyond the obvious safety risks, manual inspections are prone to error and carry a heavy financial burden, often estimated at hundreds of thousands of dollars per week in lost production. To address these inefficiencies, the industry must transition toward automated, remote data acquisition.

Our speaker, Dr. Joe Cronin, is a recognised leader in applying technology and automation to enhance safety and efficiency in underground hard rock mining. During his tenure at Rio Tinto, Dr. Cronin was instrumental in the successful automation of the E48 production level at Northparkes Mines. This work demonstrated the transformative potential of remotely operated equipment in removing personnel from hazardous environments.

As the founder and CEO of Australian Droid & Robot (ADR), Dr. Cronin now champions the implementation of innovative remote data acquisition systems designed specifically for the unique challenges of underground environments. His work focuses on leveraging robotics to boost both operational safety and productivity.

In this lecture, we will explore how sensor-rich robotic platforms revolutionise the mining paradigm. By scheduling data capture from a central control centre during active production, operators can recover significant lost time and eliminate the need for personnel in hazardous zones.