Theme: Process and Decision Automation (Smart Data Analysis, Mine Internet of Things)

Data driven geology - How operations can adopt a data-driven culture and reap the benefits of machine learning for managing their deposit

Geological models are the cornerstone of good planning, and must be continuously refreshed as new information becomes available. Geologists hold the keys to valuable data and are accountable for its timely provision.

When upfront performance comes into question, behind the scenes modelling of geological and grade control data merits attention with respect to improving accuracy and productivity.

Artificial intelligence and cloud computing herald significant increases in the speed and repeatability of modelling, with the promise of streamlining daily workflows for geologists and engineers.

This approach is supported by machine learning and delivers the best of both worlds - removing the need for mining professionals to spend time on mundane processing tasks while freeing them up to apply their professional expertise to interpretation and evaluation.

An example sees corporate geologists analysing information on screen as it passes through the system, with sign off points at critical stages.

Committing to this change in workplace operations requires a cultural shift which may not come easily. The technical side of a data driven approach can be achieved with emerging technologies. Managing the human side of data driven systems requires clear communication and support from management, as well as personnel who are adaptive to the benefits of an improved and more efficient means of delivering outcomes.

Steve Sullivan, Senior Technical Sales Specialist, Maptek, has 35 years industry experience with expertise in geological modelling and resource management throughout Australia and Asia. As a resource geologist he has worked across a diverse range of metalliferous and energy commodities applying his expertise in different estimation techniques and methods. Steve is Technical Lead for DomainMCF, the commercial application of machine learning to geological domain classification and resource estimation.