

# DEPARTMENT OF MINING ENGINEERING RESEARCH

## **The application of VR technology to enhance the learning process of AEL personnel and related**

The virtual reality (VR) training project of the AEL Intelligent Blasting Chair in Innovative Rock-breaking Technology in the Department of Mining Engineering identified the need to digitise the current training that is being conducted for the Intellishot® electronic detonator product using a flipped classroom approach. This entailed the development of the following elements:

- A theory component using six e-learning courses: The trainer invites trainees to this training programme by issuing login details on the AEL learning management system (LMS). The trainees work through the e-learning courses at their own time and pace. All this data is captured on the LMS so that the trainer can see who has worked through the course and who needs additional support.
- Face-to-face training: This will initially consist of filling the knowledge gaps. A question-and-answer session is held before the actual training starts. The trainee is thus introduced to the VR programme and works through a facilitated perfect blast (voice-overs, as well as facilitator explanations). This takes the trainees into a trouble-shooting phase. When all the trainees have worked through the perfect blast, they work through a second round without facilitation, where two errors are randomly displayed. The trainees then have to apply what they have learned about solving errors. Finally, they complete a VR assessment, which the trainer grades, with feedback captured on the LMS.
- Final assessment: The final assessment is when the trainee conducts a live blast.



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