



Marker trials have been an important tool in the quest to understand flow in mass mines. Before Smart Markers were available, such trials were done with steel pipes with ID numbers welded onto them. The pipes were installed in the mine, with their codes and installation locations recorded. During the extraction process, “tramp magnets” near the crusher remove pieces of steel such as reinforcing rods to protect the mine’s main conveyor belt from damage. These tramp magnets also removed the steel pipe markers. Conducting such trials was labour intensive because mine staff needed to manually recover the markers from the tramp bins. This technique also lacked data precision.

By automating Smart Marker detection and providing high resolution data that can be easily viewed and interpreted, the Smart Marker System makes it easy to monitor and assess flow in mass mines.

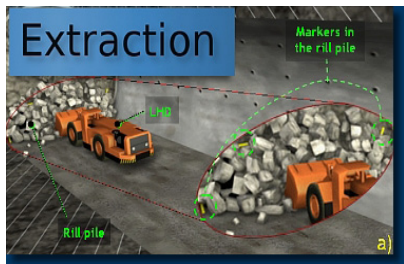
Here’s how it works:



Installation

Readers are installed above locations where the LHDs, extracting ore and Smart Markers, will travel.

Smart Markers are activated and installed in the ore body, or are ‘fed’ to the cave.



Extraction

After installation, Smart Markers flow with the ore to the drawpoint.

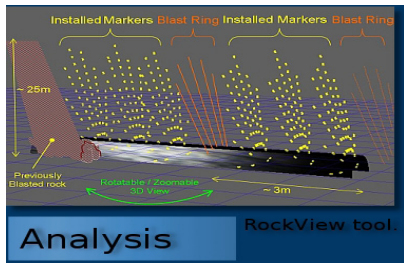
An LHD loads ore and any Smart Markers into its bucket.



Detection

Readers mounted to the ‘back’ (ceiling) of the mine automatically detect Smart Markers in the LHD bucket (allowing the draw point to be established).

Reader data is transferred to the surface via network or Bluetooth download to a Scanner.



Analysis

Underground rock flow analysis begins as soon as Smart Markers are automatically detected.

Graphical tools, such as ‘RockView’, supplied with the Smart Marker System, simplify the task of analysing the underground rock flow in the mine. Data can also be exported to spreadsheets or other analysis tools.