The Situation

In late 2008 Century Mine peaked in production, with over one million cubic metres of waste removed from the pit each week. This was the culmination of a ramp up in annual production from 26 million to 41 million cubic metres that began in 2006. To realise such a target, the Orica blast crew, the R2S™ (Rock to Specification) team and the Drill and Blast department worked hand in hand with the Planning and Operations departments to maximise blast crew productivity, ensure broken stock for shovels and minimise production equipment downtime due to blasting events.

On the 11th of November 2008, the largest electronic blast in Century’s history was initiated, yielding some 805,445 cubic metres of broken ground.

The R2S™ Partnership

Since 2006, the R2S™ partnership with Century Mine (one of the Orica Blast Based Service™ offerings), has delivered measurable savings through the application of technology, driving blast pattern optimisation, and improving drilling and explosive loading while increasing shovel dig rates and productivity.

The i-kon™ digital energy system has been a cornerstone of the R2S™ partnership, delivering high accuracy programmable delays from 1 to 15000 milliseconds, essential for the blast hole interactive initiation sequence used on site.

To date, over 235,000 electronic detonators have been used at Century Mine to blast over 102 million cubic metres of Rock to Specification.

The Blast

The largest electronic blast in Century’s history was initiated on the 11th of November 2008. The blast, which delivered 805,445 cubic metres of broken stock, was made possible through the use of the i-kon™ digital energy control system. SHOTplus™ blast design software and the PDA-based (DIPplus™) were implemented to drive the relationship between blast design to on bench quality assurance and control systems essential in maintaining shovel productivity and wall stability.
Case Study
Driving Shovel Productivity and Wall Control through the Managed Delivery of Technology
Century Mine, Australia

The blast took 66 hours to load, with a total of 1202 i-kon™ detonators, 17,000m of harness wire and 532,624 kg of bulk explosive used. The blast spanned 3 material domains and incorporated 5 different burden and spacing configurations to deliver a unique production-trim component ensuring final wall stability.

The Result
High hydraulic shovel productivity was achieved during the excavation of this blast, as a result of quality design, loading, initiation and the mitigation of edge effects.

Acknowledgements
Orica Mining Services wishes to thank the Drill and Blast team at Century Mine for their partnership in achieving this optimal outcome.