

Increasing Productivity in Mining

***Ima Engineering Ltd Oy presenting
- latest technology and applications***

Mines and Technology, Helsinki 2017

**Mr. Jukka Raatikainen, CEO
Ima Engineering Ltd Oy**

Increasing production efficiency in mining
Reduced Waste Rock Dilution

5% to 10% more earnings!



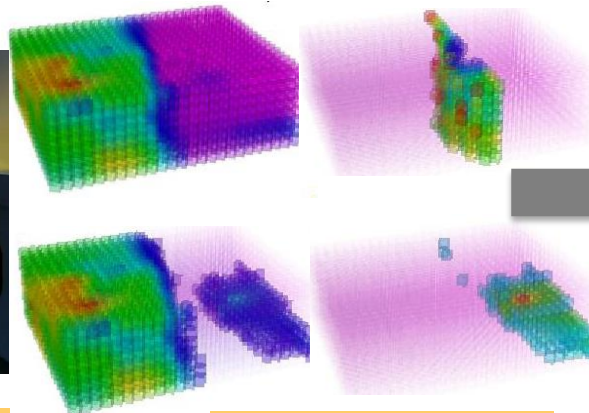
**Sampler-Analyzers in On-line
Analysis of Drill Cuttings**
* every meter is analyzed
* Representative and accurate

3D models of Blast Hole Bench

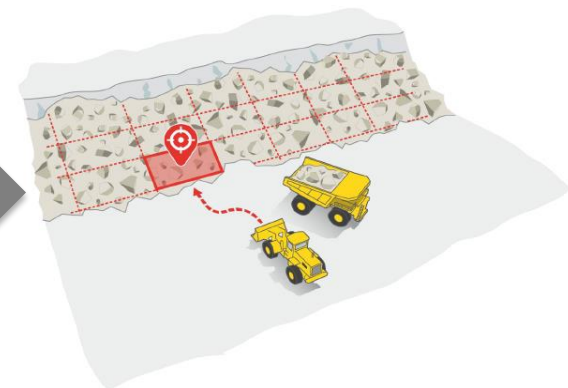


Dilution is detected

Muck -pile is better known



Ore loss is detected



Accurate Bench models in Time!!

Head Grade in feed is stable

***Accurate location of the ore in exploration
Latest technology using on-line XRF analysis***



***Accurate location of ore before blasting
3D model of the Bench during production drilling***

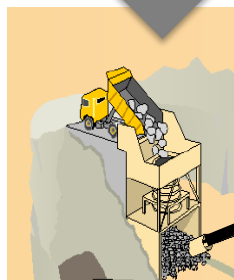
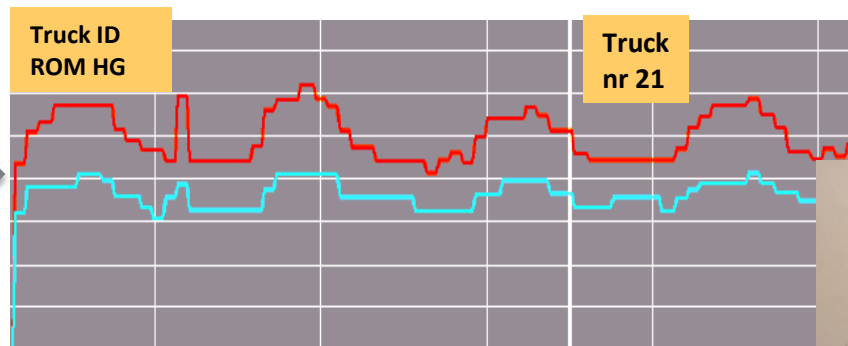
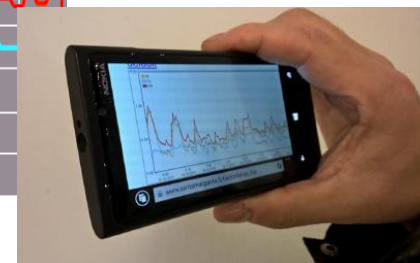


IMA Drill Cuttings Sampler-Analyzer (PDSA) on-line analysis on the spot

***Advanced new technology and services available
Analyze While Drilling, Measure While Drilling***

Increasing production efficiency in mining***Higher Head Grade******5% to 10% more earnings!*****Muck-pile in the mine****Truck
nr 21****On-line Analysis of Primary
Crushed ore from the Muck-pile**

- * Analysis every minute
- * Ore Grade of each Truck is known accurately
- * Selective Loading made possible

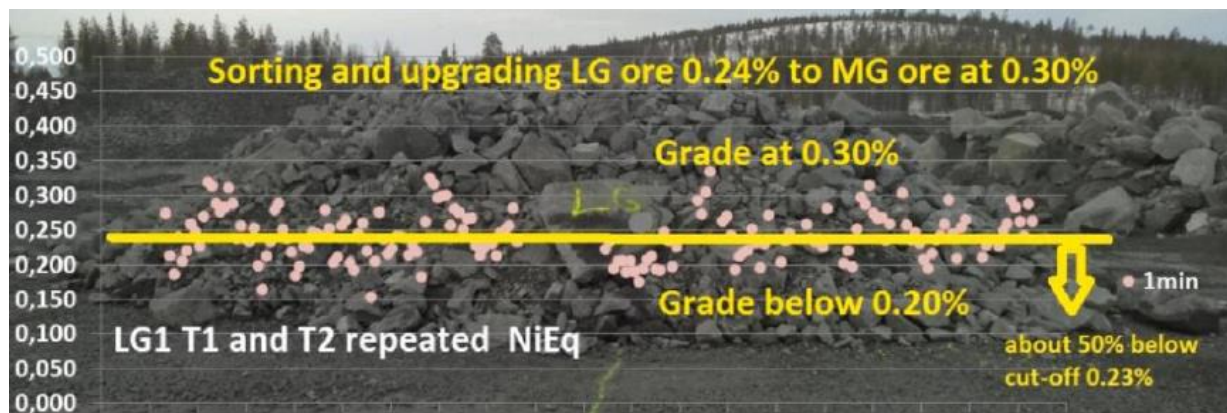
**Primary
Crusher****On-line
analysis****Trends and Grade in real-time**

***Accurate Grade control in Loading - on-line analysis of primary crushed ore
By each and every truck load to crusher – Muck Pile composition as feedback***



***Advanced new technology and services
instant ore Grade Trend in cloud available
on mobile devices***

Bulk Ore Sorting – IMA mobile BOSS system (Bulk Ore Sorting System)
Recovering ore from waste– Increasing Head Grade in Mill Feed
5% to 10% more earnings!



Ore Grade below 0.20% cut-off is sorted to Heap Leaching



ima engineering

INNOVATIVE MINERAL ANALYSERS

www.ima.fi

Thank you !