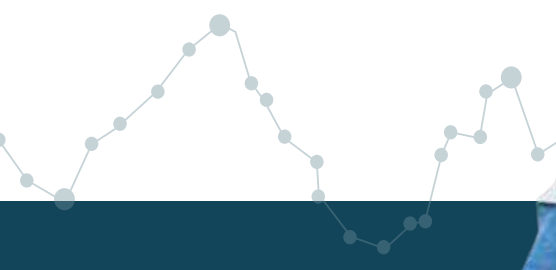# OPERATOR
UTILISATION

In mining one of the most critical metrics to measure from both a production as well as a safety perspective is operator performance and key control. This allows for all

the equipment productivity and efficiency KPI's to be further linked to specific operators. The cost of operators in mining are generally added to the cost of the mining equipment, and not as a time related cost, in order to simplify mine cost calculations. An analysis of the actual operator allocations and time spent is essential to ensure operator performance within safety efficiency parameters.

Sens Mining offers a unique key control system in which keys required to start machines, are controlled virtually, and offers the mine an accurate and pro-active key control solution as follows:

• Each operator is issued with a unique key which related directly to the machine license he has, the mine on which it is licensed to be used, him specifically and the time of license expiry

• Keys are further associated to the operator pre-requisite permits such as medicals and has-chem (if applicable) even before the operator is allowed to start a machine.

• The key control works in disconnected environments and requires no direct real-time communication with the machine to be enforced or to be expired.

• The key control further requires no maintenance on the system for effective key control as the virtual keys are linked in time and will actively expiry on the desired time with no additional human intervention. Making it unique and one of a kind compared to traditional operator identification solutions.

- With the effective key control in place the mining activity is then linked to operators at every step of the way.

- Sens data in terms of all KPI data (Production, hours I.E. revenue and costs) is associated with operators in real-time.

- This association allows the mine the ability to generate a wide variety of operator KPI's in terms of operator performance such as:

  - Operator production vs Machine hours (BCM/Hour or tons per hour)

  - Operator mining efficiency.

  - Operator performance vs training needs.

  - Operator improvement or degradation in performance over time - identifying operator training requirements vs training improvement effects.

  - Operator fatigue metrics.

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