

## Automatic Calculation of Appropriate Amount of Explosive for Tunnel Blasting Based on Drilling Data in Excavation — SMC Tunneling Series "Automatic Smooth Blasting" —

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This system is used for drilling and explosive charge in blasting excavation of mountain tunnels. Based on drill logging data such as drilling velocity and pressure of rod turning obtained when drilling charge holes with drill jumbos, the bedrock conditions ahead of the excavation face is grasped and assumed, and the appropriate amount of explosive is automatically calculated and displayed on the monitor. After blasting, the excavation face is measured in three dimensions, and the relationship between the amounts of explosives and overbreak is analyzed and fed back to the automatic calculation of the amounts of explosives to improve its accuracy. This reduces overbreak and shortens the construction cycle, and makes drilling and explosive charge more efficient.

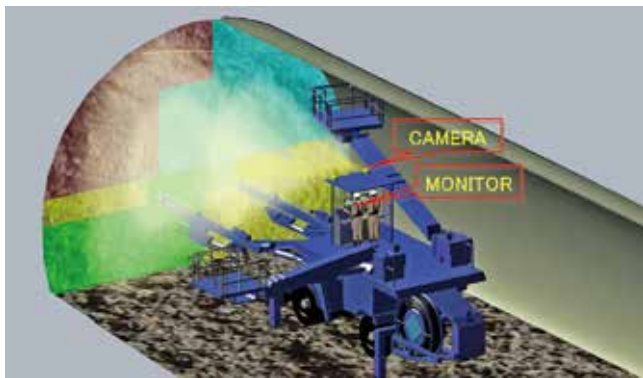


Fig. 1 Image of system



Fig. 2 Mapping on monitor