

The SMX Blast Controller – A new tool to determine the geometrical parameters of a blast based on 3D imaging

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The SMX Blast Controller is a novel tool for precisely controlling the geometry of a blast based on the technology of 3D imaging. It enables to derive precise information about the geometry of the face of a bench in a quarry from a pair of stereoscopic images taken from the bottom level of a bench with a calibrated standard digital camera. Apart from staking out the blast position with delimiters that mark the area to blast and taking then two images (freely), no further actions are required which allows to perform the data acquisition without requiring any surveying skills. The 3D image generation and blast planning does not require special computer. It is estimated, that every blast foreman is able to work with the system after a one day training as the system includes a high grade on automatism. The software package allows the blast foreman to design and stake out a blast, based on provided geometric values, such as burden, side spacing, hole inclination, sub-drilling, row number & distance and drilling pattern. The software connects these values with the 3D information acquired by the digital images. All the drill & blast information can be used also for blast documentation. The SMX Blast Controller overcomes also the problem of doing the back transfer from maps de-rived by surveying into nature as the resulting 3D image and all the information associated to it (hole position, etc.) can be correlated with the nature by visual comparison and the help of a single reference line, defined by two points. The system is de-signed to be used also in small to medium quarries. It can help, that the control of the geometry of the bench face and the precise design of the charge of the blast on a borehole per borehole basis will become an accepted daily routine.