Engineering Company Implements Augmented-Reality Welding Training

Kraatz Engineering, situated in Walvis Bay, Namibia, has installed an augmented-reality welding simulator supplied by Sangari SA. The simulator is being used to upskill trainee welders without incurring the costs of expensive material such as welding rods, steel plates and oxygen.

Kraatz Engineering provides services to the oil and gas, mining, fishing and general industrial sectors in Namibia as well as on the western seaboard of Africa.

"The Soldamatic provides a safe environment with no need for special clothing or ventilation. The welding can be done in any environment and it is 100% safe, simply because it is a virtual welding environment and has no gas emissions," said Dirk van Niekerk, MD of Kraatz Engineering.

"The system is sophisticated in providing augmented-reality 3-D vision in a workshop environment. Payback for a large training institution is about 18-24 months. The quick payback period is achieved because no consumables are used and there is no wastage," said Bez Sangari, CEO Sangari South Africa, sole distributor of the product.

The simulator consists of a hardware unit the size of a standard PC, with a built-in screen that allows the trainer to view the student's progress in real-time, as well as it being recorded. The trainee wears the virtual-reality headgear which simulates a real welding environment.

The headgear generates realistic welding graphics such as the weld pool and beam. It emits simulated smoke and sparks and simulates heating of the affected area, all through the student's headgear. It also simulates cracks, filler material, gravity and undercutting.

"Welding skills can be trained for specific applications and the student's performance measured in a fair, reliable and unbiased manner. The unit includes 93 different training lessons and customised lessons can also be added," said Mr Sangari.

Both the trainer and trainee are able to analyse and assess the welding performance in a video format afterwards and evaluate skills such as the welding velocity, stick out, travel and working angles. When required, maintenance and upgrades of the software can be done remotely.

The system supports SMAW, GTAW and GMAW processes and a variety of welding joints such as V-butt joint, Lap, T-joint, pipe to square butt joints and pipe T-joints and a variety of angle welding exercises.