

Devastation scene mapping and modelling

The speed and versatility of laser scanning combined with Maptek[™] I-Site[™] Forensic software provides a complete system which can tackle many applications. One of these is assisting forensic personnel to map and model a scene.



I-Site 3D laser scan in true colour and 2D plan build from scan data

The intense and heavily detailed 3D data produced by the Maptek[™] I-Site[™] laser imaging system is ideal for visualisation and interrogation of a scene to determine the devastation process.

Such a scene confronted investigators at the Kuta beach region of Bali in 2002.

The increasing threat of terrorism has made it imperative for global task forces to implement better ways of collecting and analysing data from complex devastation sites.

Conventional methods would require a person to measure points of interest at a particular site using either a tape measure or total station.

This has many limitations. Frequently, after manually measuring a scene then returning to the office for processing, it is realised that an area has been missed or not covered in sufficient detail.

With the Maptek[™] I-Site[™] 4400, everything is captured in 3D up to incredible distances (400 m). From this 3D data the user can quickly produce 2D plans of a site, assisting in-field technicians to mark up and calculate accurate distances faster.

Not only does the I-Site 4400 collect information on the immediate scene, but also distant buildings and structures of importance.

Captured structures can play a significant part in the total interpretation of the scene later in the investigation. Because the 3D data is tied in using Maptek[™] I-Site[™] Forensicsoftware, the user can easily and calculate accurate distances to areas of interest in the scene.

For example, forensic scene examiners can accurately measure distances and build threat domes that visually represent the explosion on the surrounding area. This allows them to fully immerse themselves in the data, look at it and interrogate it from any angle.

Highlights

- Ideal for visualisation and interrogation of a scene
- Scanner has speed and versatility
- User can easily and accurately calculate distances to areas in a scene
- Images captured in 3D up to 400 m in distance



CASE STUDY / I-SITE





Scan data with a surface model

By recording the area in extremely high detail with laser scanning, forensic personnel can interrogate, visualise and take measurements at any stage during the investigation.

The I-Site 3D laser imaging system combines hardware and software in a seamless solution that maximises data collection and provides users with unique ways in which to analyse, interrogate and model information from a scene. Scan data viewed from acquisition, in true colour

I-Site Forensic software allows you to place yourself in any position looking at any object in a scene. You can place an individual in the exact location they were in at the time of an explosion, an invaluable tool in assisting investigators to build an accurate picture of the preblast scene.

The seat of the bomb's explosion reveals a great deal of information to a forensic examiner. Collecting that data manually and then cleaning the scene can often be a rushed process.

Once a scene is cleaned it is usually pointless to return to the site for further investigation. By recording the area in extremely high detail with laser scanning, forensic personnel can interrogate, visualise and take measurements at any stage during the investigation.

This often assists in clearing and returning the site to its original state for grieving purposes as quickly as possible. The I-Site 3D laser imaging system combines hardware and software in a seamless solution that maximises data collection and provides users with unique ways in which to analyse, interrogate and model information from a scene.

The I-Site 4400 is a ground based, eye safe instrument that significantly reduces the time spent at a scene.

The purpose-built panoramic digital colour camera within the I-Site 4400 allows simultaneous acquisition of laser scan data and 360 degree high resolution colour textures which can be automatically rendered over the 3D point cloud.

Thanks to the Australian Federal Police and Lester Franks Survey & Geographic

First published December 2008