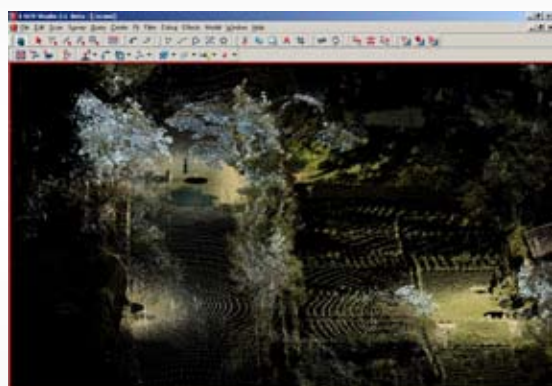


Devastation Scene Mapping and Modelling

The speed and versatility of laser scanning combined with I-SiTE Forensic software provides a complete system which can tackle many applications. One of these is in assisting forensic personnel to map and model a scene. The intense and heavily detailed 3D data produced by the I-SiTE laser imaging system is ideal for visualisation and interrogation of a scene to determine the devastation process.



I-SiTE 3D laser scan data in true colour

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

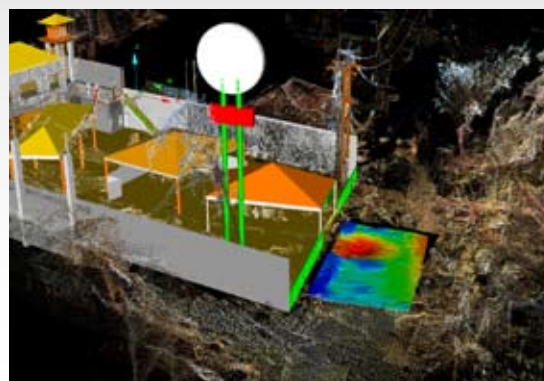
Conventional methods would require a person to measure points of interest at a particular site using either a tape measure or total station. This has many limitations. Frequently, after manually measuring a scene then returning to the office for processing, it is realised that an area has been missed or not covered in sufficient detail. With the 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.



2D plan built from scan data

Not only does the I-SiTE 4400 collect information on the immediate scene, but also distant buildings and structures of importance. These 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 I-SiTE Forensic software, the user can easily and accurately calculate distances to areas of interest in the scene.

For example, a forensic scene examiner 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. With features such as contouring and surface modelling within I-SiTE Forensic, it is easy to build surfaces of bomb craters and topography to improve visualisation. Several methods allow for the export of data to other specialised software products.

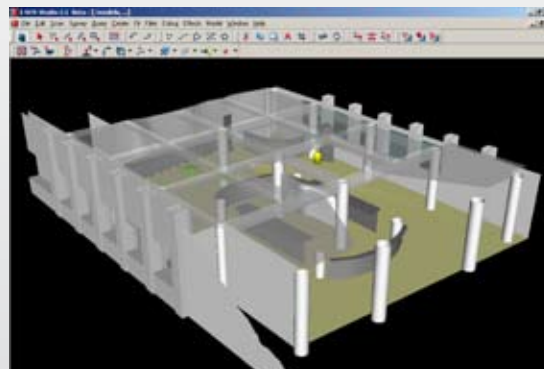


Scan data with a surface model



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 pre-blast scene.



3D model built from scan data

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 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.