



Nickl scans entire accident sites in high speed and precision.

Accidents under the microscope

ACCIDENT RESEARCH Traffic accidents add to congestion problems on many roads as it often takes more time to document the crash site than it does to evacuate the injured.

New technologies such as laser scanning are emerging to make this documentation process faster and more accurate. As these methods replace traditional measuring tape and digital cameras, road congestion should be reduced and it will be easier to accurately establish the cause of the accident.

Nickl, a consultancy company that specialises in forensics and technical re-

ports, relies on laser scanning methods. On behalf of German courts, the company scans entire accident sites and damage to vehicles, roads and buildings. To do this, it uses a model from the FARO Photon series.

The mobile laser scanner creates 3D images of the surrounding objects at speeds of 120,000 to 976,000 pixels per second. Every detail is accurate and the scan can be in full colour. Only its light beam comes into contact with the evidence and objects at the location. Minutes later, the investigator has left the inspection site and provides the digitalised data to all involved in reconstructing the course of the

accident or crime.

Using 'View Pro' visualisation and animation software from the company Pointools, Nickl's engineers produce undistorted pictures – so-called orthophotos – and video clips where the viewing angle can be varied. They insert scaled 3D-representations, for example of the accident vehicles, into the scanned environment and simulate their movements. In this way, geometric details of the accident location or objects involved can be clarified quickly and with great precision.

FARO scanners came to the attention of the engineering consultancy firm in 2006 at the Trade Congress of the >>

4 GOOD REASONS

A portable non-contact measurement system using laser technology to accurately capture measurements. The system rotates 360° and automatically measures everything within the line of sight from the scanner's position.

1 Optical Measurement: The intelligent laser system carries out optical non-tactile measurements.

2 Resolution: The scanner creates an image with an extremely high resolution of up to 711 mio. pixel per scan.

3 Measuring Volume: The laser scanner captures measurements within a spherical radius range of up to 76 metres.

4 Portability: With a weight of 14.5kg the laser scanner is easy to transport.

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>> European Association for Accident Research and Accident Analysis (EVU). After a series of demonstrations and tests, Nickl decided to acquire a model from the Photon series.

The firm's co-proprietor, Dr. Alexander Sporrer, comments on the use of the device in his company as follows: "Our

 aim is to substantially improve the analysis of car accident scenes.

There is no standard solution for what we have in mind. We greatly appreciate Photon's precision and we expect that scanning accident scenes will become the method of choice."



3D model of a crime scene

ABOUT INGENIEURBÜRO NICKL

In its almost 50-year history, Nickl, an engineering consultancy company from Munich, Germany, has built up a reputation as a highly competent vehicle and accident investigator. Alongside classic damage assessment and accident reconstruction, Nickl also offers technical analyses to secure evidence. The firm's core work includes the biomechanical evaluation of traffic accidents and other sequences that produce injuries. The firm ensures that its technical knowledge is both broad and up-to-date through independent scientific work and contact with leading industrial companies and research institutes.

ABOUT FARO

FARO develops and markets computer-aided coordinate measurement systems and measurement software worldwide.

The portable measurement equipment can be used for production planning, and inventory documentation, as well as for the investigation and reconstruction of accident sites and crime scenes. They are also used for digital scanning of historical sites.

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