Always innovative

Forensic Data Capture – The scene of a crime or major disaster is an extremely taxing environment with many competing demands placed on the personnel investigating the incident. The collection of evidence is one of the many vital tasks that needs to be carried out with extreme care, professionalism and in compliance with regulations.

The completion of this part of the investigation in a professional and productive manner will contribute to the successful conclusion of an enquiry. Topcon understand the demands placed on forensic investigators and offers a range of state of the art solutions that can be employed by forensic practitioners.

Topcon are continually developing innovative and potentially world leading technologies. Utilising unique technologies, our products provide the best solutions for forensic investigators. Our innovations will help you to maximise your productivity, increase the value of your evidential data and capitalise on your contribution to forensic incidents.
Overview Topcon Technologies

Capture Reality – With our imaging heritage, it is not surprising to find that many of our high end products incorporate imaging technology. These allow our users to not only measure, but to Capture Reality; using the IS Imaging Station, GLS-1500 laser scanner, IP-S2 mobile mapping and even from high resolution imagery from digital cameras.

Long Range – Topcon total stations feature our incredible reflectorless technology which enables measurements of up to 2,000m with pinpoint accuracy. Imagine being able to set up and carry out survey measurements from positions of inaccessible locations or scan crime scenes from great distances. Our QS, IS and GPT-7500 products all feature this capability.

Mobile Data Collection – Topcon’s IP-S2 Mobile Data Collection System overcomes the challenges of mapping 3D features whilst achieving a high level of accuracy. The system uses three technologies to achieve and sustain a highly accurate 3D position even when the vehicle is in locations where satellite signals can be blocked by buildings, bridges and tunnels.

Universal Tracking – All of Topcon’s G3 GNSS receivers feature the latest Universal Tracking technology, which allows for reception of all currently available and future planned GNSS signals. Universal Tracking allows the future proofing of Topcon’s receivers by not restricting channel selection at the time of manufacture. Universal tracking gives the freedom to utilize the available signals all the time, now and in the future.

G3 – Our innovative Paradigm G3 chipset is a true leap forward in technology in the positioning industry and is the world’s first multi-constellation processor utilising our Universal Tracking Channel technology. With a 75 percent reduction in size compared to the previous Paradigm chip and using less power, the G3 still has the added processing power to fully exploit the additional signals and satellite systems of the future.

XTRAC8 – Our top of the range QS robotic and IS-3 imaging stations both come as standard with our superior XTRAC8 search, lock and tracking system. Employing entirely new optics, laser system, and further advanced algorithms, and in conjunction with our lightweight RC-4 remote control system, we can ensure that the operator has the most efficient tools available when working on site in one-person mode.
Solutions for Capturing Data at Forensic Scenes

Due to the diverse nature of forensic scenes there are a variety of methods for identifying and recording the geographic location of evidential items. Topcon have a wide range of solutions that can be applied to all forensic incidents that will enable the investigator to work efficiently, professionally and in accordance with regulations.

Whether the incident is a crime scene located in a room or a major disaster spread over a large area, Topcon products can be utilised to integrate seamlessly into any investigative framework. Utilising unique technologies, our products provide the best solutions for forensic investigators. Our innovations will help you to maximise your productivity, increase the value of your evidential data and make the most of your contribution to forensic incidents.

Forensic Crime Scenes and Road Crash Investigation –
Forensic scenes typically contain numerous individual items of evidence such as vehicle components, blood spatter and explosive debris and it is not always obvious at the outset what items are of importance.

Using Topcon’s 3D laser scanner to quickly capture everything at a scene means that all items are given equally high importance. The accuracy of the scanner ensures that the forensic scene is recorded in such a way that full reliance can be placed on the data at any subsequent legal proceedings.

The data can be subsequently analysed and pertinent items can be measured or used for reconstruction purposes.

Fire Investigation and Road Crash Investigation –
A picture tells a thousand words – Topcon’s Imaging Station provides the ideal solution to the problems encountered at forensic scenes.

The Imaging Station provides the power, accuracy and speed of a total station; the functionality of a robotic instrument combined with the auto-scanning capabilities of a laser scanner to deliver the all-round choice for forensic situations.

The ability to take long range, high accuracy measurements using either the on-board live video or telescopic zoom increases efficiency and removes the operator from hazardous situations such as a major fire.
Crash Investigation and Reconstruction – The demands placed on the police to re-open roads quickly after road crashes have to be balanced with the need to properly investigate the incident. One way that the time spent at a scene can be reduced is to speed up the electronic survey of evidential items. Topcon’s IP-S2 effectively addresses this by providing a fast and effective way of collecting accurate data.

Contingency Planning and Extended Crime Scenes – IP-S2 is able to quickly and accurately capture images and data over a wide area. These data can be used for 3D simulations and asset management in disaster planning. It is ideal for training and table-top exercises where the data can be easily shared amongst participants.

Outdoor Forensic Scenes – The GRS-1 is ideally suited for collecting data at outdoor scenes as it is robust, easy to use and extremely accurate. The unit is lightweight and can be used for extended periods. The colour screen provides excellent feedback for the user when using functions such as background mapping.

Major Disasters – Large scale disasters can result in the requirement to collect evidential forensic data across a wide area. This can be done quickly, accurately and reliably using Topcon’s GRS-1 GNSS receiver and specialist eForensic software.
Field Controller Mapping Software eForensic

Location based information is becoming increasingly important in the forensic sector and more organisations are turning to mobile solutions to meet their needs. In conjunction with Topcon’s range of hand-held GNSS controllers, eForensic is a customisable data collection package designed to complement the way you work.

Applications – eForensic can be used in any forensic situation where a hand-held controller is being utilised to collect data. The easy to program user interface is an ideal solution as non-specialists can be employed to capture data with minimum training. The user can be presented with the minimum of screen information and prompts necessary to carry out the required tasks.

This information can easily be tailored to suit the experience of the user or the demands of the incident. The collected data can then be reviewed, analysed, printed or exported to other software packages. The ability to overlay the evidential data on packages such as Google Maps or Bing Mapping adds extra functionality.

eForensic has been developed to allow you to concentrate fully on collecting forensic data accurately and quickly without first learning a specialist surveying software package. No programming skills are required to produce an interface that mirrors the way you work now or to replicate paper based input. eForensic provides for easy data transfer and is fully compatible with well-known Geographical Information Systems.
The Imaging Station’s flexibility is the key to its use at forensic scenes. It is just as useful at a crime scene as it is at a major incident. The ability to tailor the instrument’s functions to suit the type of forensic scene gives the investigator a clear advantage.

The Imaging Station is able to collect data at long range in reflectorless mode and this function can be very useful at crime scenes and road crash sites where evidential items are often not easily accessible. The ability to view a live video feed enables the operator to accurately select and collect evidence and the instrument’s optical zoom allows fast and accurate data collection.

The data and images collected by the investigator can be used in Topcon’s software to produce plans and detailed 3D models.
3D Laser Scanner

Topcon’s 3D laser scanner is the perfect solution for collecting data in forensic situations. It is portable, robust and easy to operate in a variety of different situations. The capability of the scanner to collect data at long range combined with unrivalled accuracy makes this the ideal tool for the forensic specialist.

Whether operating at a road crash, crime scene or major disaster the GLS-1500 provides the means for capturing, editing and viewing 3D data in a fraction of the time that traditional recording techniques achieve. The integrated digital camera is used to visualise the 3D data captured by the scanner and together they provide easy to interpret evidence.

KEY FEATURES - GLS-1500

- Scenes can be captured in minutes
- Highly detailed 3D data immediately available
- Quick set-up and long range provides maximum productivity
- Highly accurate and reliable data capture
- ScanMaster software allows easy manipulation, analysis and printing of data

LASER SCANNING

Topcon’s GLS-1500 laser scanner is ideal for use at all types of forensic incidents from indoor crime scenes to major disasters. Forensic scenes often contain a huge amount of significant articles, many very small, that are difficult and time consuming to measure using conventional techniques. The GLS-1500 is able to quickly capture every element at a scene to provide a 3D moment “frozen” in time. These data can be easily analysed, printed and used for judicial proceedings.

The scene of a fire is a hazardous situation where close-up measurement is often impossible. The Topcon laser scanner is able to accurately capture data at a long distance thereby facilitating easy measurement without putting the operator in danger. This can also be effectively used in situations such as a building collapse or other scenario where the items to be measured are inaccessible.

Road crash scenes often consist of many evidential items spread over a large area. Measuring these items using conventional methods is time consuming and labour intensive.

During this measuring phase the road has to remain closed to traffic. Using Topcon’s laser scanner the scene can be measured in minutes by one person and the road can be opened far more quickly.
GNSS RTK Receiver

The controller is equipped with a large, touch sensitive colour screen and uses the familiar Windows Mobile operating system. The unit has an in-built camera that can be used for taking geo-referenced pictures and is also equipped with a barcode reader. The controller is ideal for use at forensic scenes as it is rugged, weatherproof and easy to use.

The GRS-1 is ideal for use in outdoor forensic situations where data needs to be collected quickly and easily over a large area. The unit is quick and easy to set up, lightweight and ideal for users not trained in surveying techniques. The GRS-1 is ideally suited for use at road crash scenes where line of sight is often obscured by vehicles and roadside furniture.

Major disaster and outdoor crime scenes present many challenges for the investigator. The ability to quickly capture the geographic position of evidential items across a large area, regardless of the terrain, is a major benefit that the GRS-1 can bring to an investigation.

Specialist Search and Rescue teams need the ability to accurately pinpoint various features including their location, the search area and items of interest. The GRS-1 is an ideal tool for this environment as it is rugged, quick and easy to operate and provides excellent visual feedback through the colour screen.

The accurate identification of resources and assets is a key component of contingency planning. Using the GRS-1, a non-specialist is able to easily and quickly capture the required items and combine with attributes in the field. This ensures that an up to date database is always maintained.

**KEY FEATURES - GRS-1**

- Accurate and quick method of capturing data by one-person operation
- Rugged, compact and lightweight construction
- Bluetooth and Wi-Fi connectivity
- Combined GNSS receiver and field controller
- In-built camera and compass


3D Mobile Data Collection

Topcon’s IP-S2 Mobile Data Collection System overcomes the challenges of mapping 3D features whilst achieving a high level of accuracy. The system uses three technologies to sustain a highly accurate 3D position even when the vehicle is in locations where GNSS satellite signals can be blocked by obstructions such as buildings, bridges and tunnels.

The IP-S2 quickly provides high accuracy data and dynamic imaging for any type of mapping project. The vehicle-mounted system can scan data at normal travelling speed whilst recording items such as crash scene debris and street furniture.

Applications – The ability to collect full colour, high-resolution data dramatically increases efficiencies in a variety of forensic situations.

Crash Investigation and Reconstruction – The demands placed on the police to re-open roads quickly after road crashes have to be balanced with the need to properly investigate the incident. One way that the time spent at a scene can be reduced is to speed up the electronic survey of evidential items. Topcon’s IP-S2 effectively addresses this by providing a fast and effective way of collecting accurate data. Where conventional surveying techniques are utilised for the immediate crash scene, IP-S2 can be utilised for the remainder of the outlying scene and all the data can be combined for later analysis.

Contingency Planning and Extended Crime Scenes – IP-S2 is able to quickly and accurately capture images and data over a wide area. These data can be used for 3D simulations and asset management in disaster planning. It is ideal for training and table-top exercises where the data can be easily shared amongst participants.

Collecting evidence across an extended crime scene can be time consuming and resource intensive. IP-S2 provides a method for seamlessly capturing large amounts of accurate data that can be utilised during an enquiry. It could form the basis of a 3D animation for court or for the testing of witness evidence in relation to sight lines or ballistic trajectory.

Mobile Data Collection – IP-S2 System

MOBILE DATA COLLECTION

KEY FEATURES - IP-S2

- Highly accurate GNSS tracking
- High performance inertial measurement unit
- Geo-referenced spherical imagery produced
- Factory calibrated, integrated system
- Car mount fits standard roof rack
- Cost effective turnkey solution
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About Us

With over 75 years of experience in the manufacture, distribution and support of products, Topcon is well placed to offer comprehensive support to cater for all your needs.

Established in 1932, the Topcon Group today is represented by a workforce of over 6,000. Topcon develop, manufacture, sell, and provide services for a wide range of high technology products for the capture, analysis and presentation of spatial data in the macro, micro and nano worlds.

Investment in research and development leading to innovative new solutions and products is key to the Topcon philosophy and is evident in a number of industry firsts that include the first coaxial EDM total station, the GTS-1 and the unique GPT-7000i series imaging total stations incorporating digital cameras.

Additionally, Topcon has produced the first and only available millimetre GPS+ system, and the first to offer a true GNSS (Global Navigation Satellite System); dual frequency, dual constellation, GPS plus GLONASS geodetic grade receivers.

Topcon recently developed the technology to add Galileo and Beidou 2 (Compass) in a new, state-of-the-art Universal Signal Tracking chip, ensuring total future-proofing of investment.

Design and specifications are subject to change without notice.