

TRIMBLE MX2 MOBILE MAPPING

USER APPLICATIONS

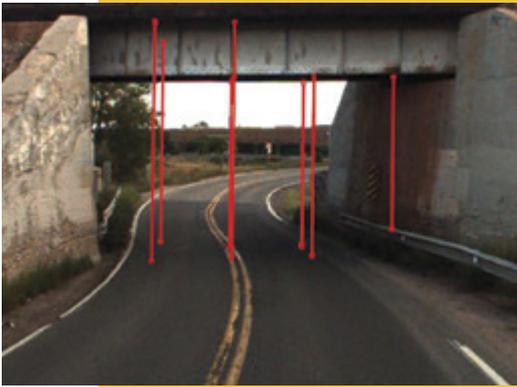


POINT CLOUDS WITHIN YOUR REACH

THE TRIMBLE MX2 IS A VEHICLE-MOUNTED SPATIAL IMAGING SYSTEM WHICH COMBINES HIGH RESOLUTION LASER SCANNING AND PANORAMIC CAMERAS WITH PRECISE POSITIONING TO COLLECT GEO-REFERENCED POINT CLOUDS AND IMAGES FOR A WIDE RANGE OF REQUIREMENTS.

The Trimble MX2 can be rapidly deployed onto on- and off-road vehicles of all sizes, and significantly reduces project field time and operator skill levels compared to traditional techniques. The MX2 is supplied with proven Trimble® Trident™ software to rapidly extract and analyze the raw data to turn it into useful geospatial intelligence.

Mobile data capture is already making giant inroads into geospatial requirements for a range of industry sectors. These include highway planning and asset management; building compliance and construction; corridor mapping for utilities, oil, and gas companies; public safety and law enforcement projects; marine/coastal mapping; open pit mining; and more. All these requirements have a common need for rapid turnaround, high-resolution output with accurate feature extraction, and – of course – value for money. The Trimble MX2 fills an important gap in the market by offering geospatial companies a highly capable and versatile system with low cost of ownership that enables them to address key opportunities in these sectors.



ROUTE PLANNING / BRIDGE CLEARANCES

The MX2 can be rapidly deployed onto on- and off-road vehicles of all sizes, and significantly reduces project time and operator skill levels compared to traditional techniques. With precise high-speed laser scanning and high-resolution imaging sensors, the MX2 is the must-have solution for quickly surveying road routes for planning heavy loads, measuring bridge clearances or measuring road widths and other critical restrictions.

DELIVERABLES

- Clearance lines and cross sections
- Photographic images along routes for inspection

CUSTOMERS

- Local government agencies
- Major specialist haulage contractors
- DOT's and their contractors
- Highways agencies and contractors



ROAD CORRIDOR INVENTORY MAPPING AND INSPECTION

Road corridor inventory mapping and inspection can be challenging because roads often need to be mapped at certain times (e.g. when traffic is calm), even the most detailed features need to be captured and data must be available rapidly. The MX2 can be deployed in no time identifying damaged infrastructure, measuring bridge clearances and making a 360° view for thorough inspection of the complete environment.

OTHER KEY BENEFITS FOR THIS APPLICATION

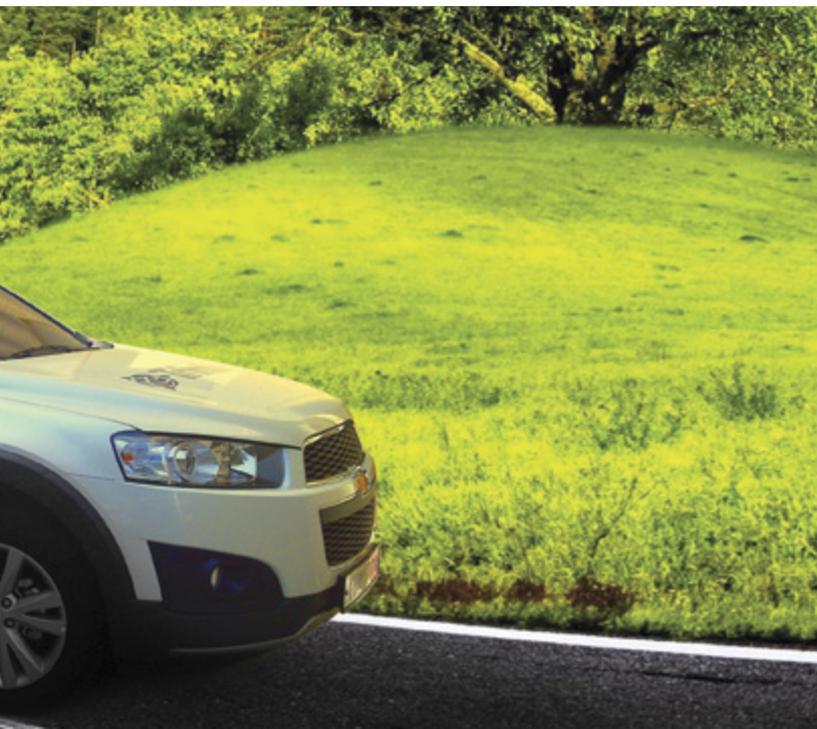
- Rapid mapping/high productivity
- Measure any feature within point cloud
- Short time in field
- Locate all street furniture
- Rapidly map temporal changes

DELIVERABLES

- DTM
- Point clouds with images
- Review images for inspection
- Extract features to GIS
- Review point clouds and images in free Trident viewer
- Colorized point clouds

CUSTOMERS

- DOT's and their contractors
- Highways agencies
- Medium to large scale survey companies
- Mapping/GIS data capture companies



VOLUME CALCULATIONS FOR EARTHWORKS AND STOCKPILES (CONSTRUCTION AND MINING)

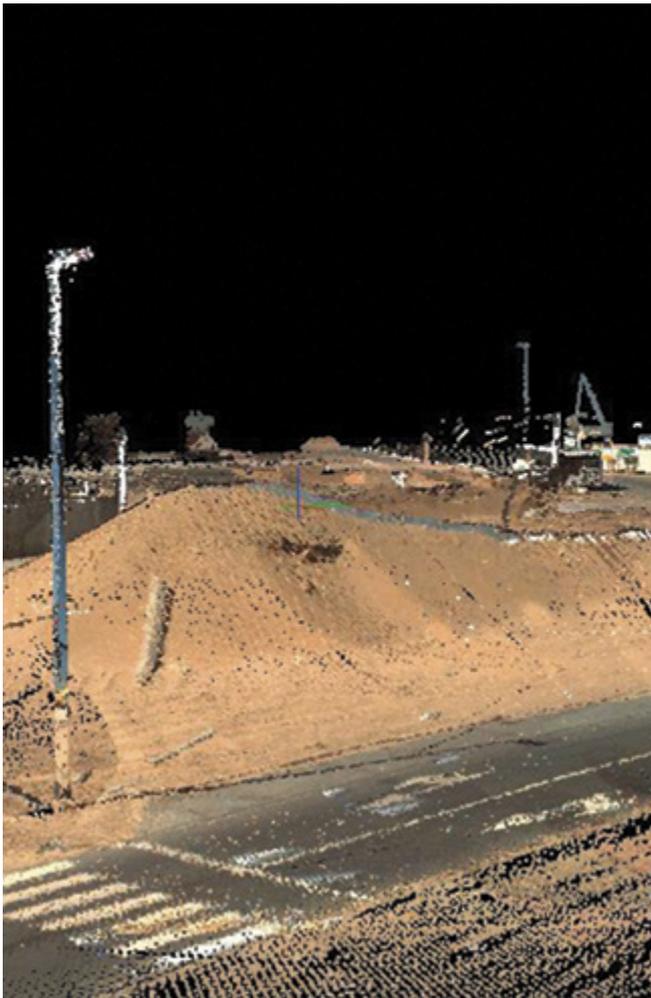
Compared to a number of traditional data capturing systems, the Trimble MX2 offers big advantages with its scanning speed and accuracy which makes it possible for surveyors to measure volumes more rapidly from a vehicle or quad bike. Because of the speed of the measurement the scans can be repeated more often. Additionally a visual representation of the terrain can be obtained which makes the MX2 a highly efficient solution for this type of application. Images can be used to extract objects positions in a terrestrial photogrammetry workflow.

DELIVERABLES

- DTM
- Identify area of interest and export Las file to Trimble Business Center or other to quickly calculate volumes
- Create mass haul reports
- Use photographic imagery as a visual inspection tool

CUSTOMERS

- Mining companies and mining contractors
- Survey companies that specialize in construction
- Construction contractors



MINING AND QUARRIES

KEY BENEFITS

With its rugged and highly portable design, the lightweight Trimble MX2 can be mounted on off-road vehicles such as quad bikes which makes this the perfect tool for scanning in a mining environment. Because of the fast way of measuring, the MX2 can be used for weekly measurements.

OTHER KEY BENEFITS FOR MINING AND QUARRIES

- Highly productive measurement capability
- The Trimble MX2 can be used in RTK mode over a small site with a local base station

DELIVERABLES

- Volume measurements (via TBC)
- Rapid DTMs of current mine layout
- Imagery for inspection

CUSTOMERS

- Mine and quarrying companies
- Specialist survey contractors



ASSETS AND UTILITY MANAGEMENT

The MX2 is easy to install and can be quickly installed for fast collection of assets or utilities data in multiple scenarios. Airports, harbors, cities, highways are just few examples. Combine the point cloud view of the 3D Map and images for a quicker and seamless extraction of data. All extracted datasets can be exported in 2D or 3D layers for the most common GIS packages together with the Geo database. The Geo database can be customized to obtain the most complete data collection required from the application.

OTHER KEY BENEFITS

- Use for mapping utilities and assets many scenarios, from small harbor to big cities
- Short time in field and no operators on the road
- Runs from a simple laptop PC
- Easy deployment
- Combined point cloud and images to quickly extract all information needed

DELIVERABLES

- Extract features from images in a GIS environment
- Points, Polylines and Polygons together with Geo Databases for the most common GIS packages (.Shp, .Dxf, MIF, etc)
- Photographic images for inspection/records
- Take measurements of critical features and clearances
- Colorized point clouds

CUSTOMERS

- Surveyors
- Municipalities
- Utilities service providers
- DOT's and their contractors
- Highways agencies and contractors
- Survey companies with a wide reach – i.e, that don't just work in a local area

UTILITY SURVEYS: ELECTRICAL INFRASTRUCTURE, PIPELINES

The ability to go off-road with the MX2 makes it the ideal corridor mapping tool for electricity distribution, pipelines, etc. Thousands of points of even the most awkward structures (like pylons) can be picked up with the MX2.

DELIVERABLES

- Colorized points clouds
- Imagery of all key features for inspection
- Extract key features as point, line and areas for export to GIS

CUSTOMERS

- Electricity distribution companies
- Oil and gas distribution companies
- Cable TV and Telecom companies
- Surveying and mapping companies



INLAND WATERWAYS, PORTS AND HARBORS

The Trimble MX2 is very flexible and portable and is easily transferable to a vessel or small boat for mapping the most challenging waterways, ports and harbors.

OTHER KEY BENEFITS

- Measurement and time change analysis of embankments
- Can be used with Qinsy capture software for combination with multi-beam/echo sounder
- Easy deployment

DELIVERABLES

- Colorized points clouds
- Photographic imagery for inspection
- Extract key features and export as point, line and area features
- Measure key features

CUSTOMERS

- River and canal authorities
- Port and Harbour Authorities
- Marine survey specialists



RAIL

KEY BENEFITS

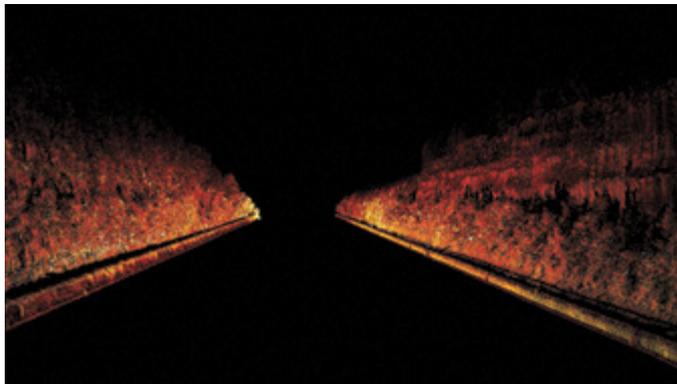
The Trimble MX2 is a versatile and flexible solution that can be mounted on a range of rail inspection vehicles. The entire track can be mapped as combination of accurate point clouds for measurement and 360° photographic imagery for visual inspection but next to that also video of the entire route is possible.

DELIVERABLES

- Track centerlines
- Point cloud data of entire route
- Rail asset feature extraction
- Update current databases

CUSTOMERS

- Rail companies
- Specialist rail contractors
- Specialist survey companies



OIL AND GAS

The rugged MX2 was designed to operate in harsh environments and can rapidly measure the location of oil and gas infrastructure and haul roads over large and remote areas. The system can easily be combined with a 360° camera for fast inspection surveys.

DELIVERABLES

- Point clouds representing as-built surveys of current status of infrastructure
- Extract key features and export (DXF, Shape etc)
- Export profiles and cross-sections to TBC for use with Machine control systems

CUSTOMERS

- Oil and gas companies
- Oil and gas service companies

ENVIRONMENTAL: BEACH EROSION, SEA DEFENCES, FLOOD DEFENCES, WASTE MANAGEMENT, ETC.

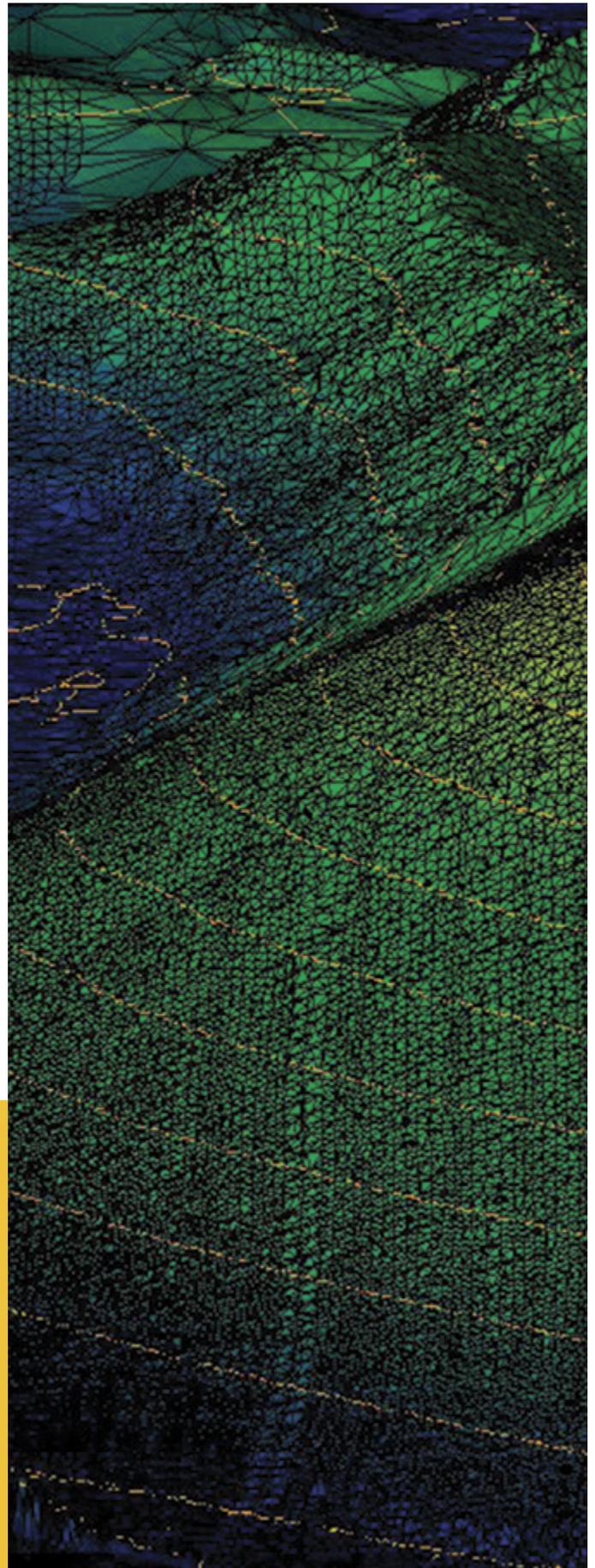
The lightweight MX2 can easily be mounted on a small off-road vehicle (like quad bike) for point clouds for measurements combined with imagery for inspection of beach erosion, sea defences, flood defences, etc. The efficiency of the system makes it the right tool to measure quickly at regular intervals for monitoring and change analysis. The Trimble MX2 is versatile and can be mounted on a wide range of off-road vehicles.

DELIVERABLES

- Digital Terrain Models
- Topographic Maps
- Cross sections and profiles
- Imagery for inspection and historic records

CUSTOMERS

- Specialist government agencies
- Specialist contractors
- Environmental companies
- Waste management companies



HISTORICAL MONUMENTS / ARCHAEOLOGY

Hard to reach and off-road historical monuments or archaeological sites can easily be mapped with the MX2. The combination of point clouds and imagery is a highly valuable deliverable for inspection of historical monuments.

OTHER KEY BENEFITS

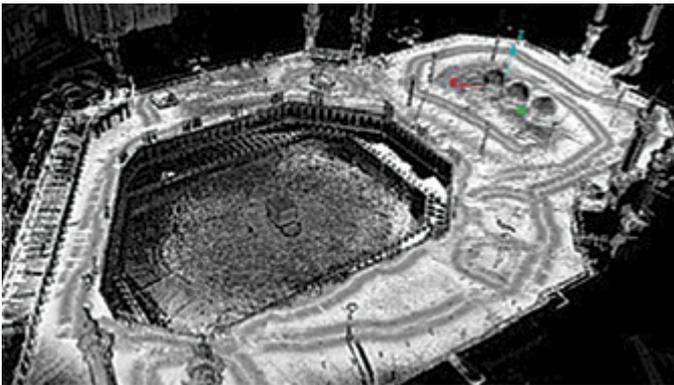
- Rapid mapping of wide areas
- Unobtrusive “remote sensing” measurement techniques

DELIVERABLES

- Topographic maps
- Photographic images for historical records
- Point clouds giving capability to measure specific areas of interest

CUSTOMERS

- Government agencies
- Universities and specialist research institutes



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