



# GEDO SCAN

## TRIMBLE GEDO SCAN SYSTEM

The Trimble GEDO Scan System is a modern, efficient tool to collect detailed information about track and surrounding features. With Trimble GEDO Scan you can quickly gather precise, high-resolution data for use in track clearance assessments and facilities management.

### TRIMBLE GEDO SOLUTION

Trimble GEDO is an integrated suite of tools for measurement, recording, analysis and applications for railway track location, design, construction and maintenance. Specially tailored for railway tasks and processes, Trimble GEDO hardware and software streamline work in both the field and office. The system uses standard techniques and data formats to share information with leading applications for railway track design and maintenance.

### TRIMBLE GEDO SCAN SYSTEM

The Trimble GEDO Scan system utilizes a Trimble TX5, TX6, TX8 or Faro Focus 3D laser scanner to collect high-resolution datasets of 3-dimensional points. The scanner is mounted on a GEDO trolley, which collects location, gauge and cant information as it is moved along the track. The combined data produce detailed 3D models of tunnels, overpasses, stations and other facilities where precise information is needed for railcar clearance and asset management.

The Trimble GEDO Scan Office 2.0 software combines data from the GEDO Scan and GEDO Rec field operations to produce a 3D point cloud.

Trimble GEDO Scan can operate in two modes. The Local mode for track clearance analysis captures information based on the offset from the rail to nearby objects.

In absolute mode, the system can create 3D point clouds and tie objects to the rail as well as defined coordinate systems.

For railway specific 3D visualization and analysis, Trimble GEDO Scan Office 2.0 uses clearance envelopes and 3D models to simulate the movement of a railcar through an existing facility or stretch of track. The

system can automatically detect locations where clearance encroachments may occur. For detailed analysis, Trimble GEDO Scan Office 2.0 can create cross section drawings and compare differences according to given profiles or envelopes.

As well these 3D data can be shared with Trimble RealWorks and other design systems.

### APPLICATIONS FOR THE TRIMBLE GEDO SCAN SYSTEM

#### Design

- ▶ Document existing conditions with high resolution.
- ▶ Analyze potential clearance encroachments against existing and design profiles.
- ▶ Create clearance databases to optimize design processes.

#### Construction

- ▶ 3D scanning to support construction processes.
- ▶ Post-construction check for track clearance.

#### Operations and Maintenance

- ▶ Clearance and conflict testing.
- ▶ Support a track clearance database for international and heavy-load operations (e.g. WinLUE for LIRA and Clearroute)

#### Asset Management

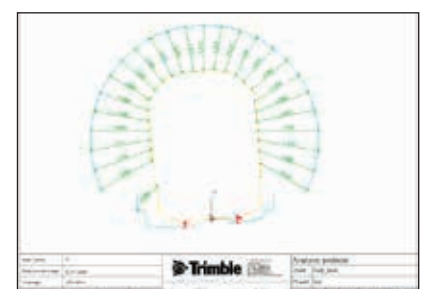
- ▶ Asset Data Collection

#### Providing Data for

- ▶ 3D Modelling

### Key Features:

- ▶ Simple, self-contained trolley used for Trimble GEDO Scan and other track measuring applications.
- ▶ Helical scanning mode captures ceilings and walls to produce accurate 3D data for modeling tunnels and overpasses.
- ▶ GEDO Scan Field software runs on the Trimble Tablet rugged PC controller. The software controls scanning operations and data collection from the scanner and trolley.
- ▶ Modular system lets you use the Trimble TX5, TX6, TX8 or Faro Focus 3D scanner for other survey and facility needs.
- ▶ Workflow and user interface are consistent with other GEDO systems to reduce training and increase system productivity.
- ▶ Supports 45° Mode for better object visibility at as-built scans.
- ▶ Neighbour track detection out of the scanning data to survey the scanned but not surveyed track.
- ▶ Chainage view for easy navigation within the point cloud.



# TRIMBLE GEDO SCAN SYSTEM

## GENERAL

Applications ..... Documentation of existing track and nearby objects;  
 ..... Design analysis for upgrades and retrofits;  
 ..... 3D modeling;  
 ..... Clearance encroachment analysis;  
 ..... Construction quality control;  
 ..... Clearance database management  
 (e.g. Clearroute, WinLUE)

## TRIMBLE GEDO SCAN SYSTEM

Relative Accuracy ..... < 5 mm at 7 m  
 Absolute Accuracy (depending on track survey) ..... typ. < 20 mm at 7 m  
 Weight (Trolley, Faro Scanner) ..... 24.8 kg  
 Weight (Trolley, TX6/TX8 Scanner) ..... 29.3 kg

## TRIMBLE GEDO CE 2.0 TRACK MEASURING TROLLEY

Description ..... Track-mounted trolley  
 ..... Supports Trimble GNSS, S-Series Total Stations, TX5, TX6, TX8 Scanner  
 ..... Faro Focus 3D X30, X130, X330  
 Gauge ..... 1000 mm, 1067 mm, 1435 mm, 1520 mm, 1600 mm, 1668 mm, 1676 mm  
 ..... other gauges on request  
 Weight ..... 16.8 kg  
**Gauge Measurement**  
 Range ..... -20 mm to +60 mm  
 Accuracy ..... ±0.3 mm  
**Cant Measurement**  
 Range ..... ±10° or ±265 mm  
 Accuracy ..... ±0.5 mm (static)  
**Power**  
 Battery Type ..... Trimble S-Series Li-Ion, rechargeable  
 Life ..... 6 - 8 hours

## TRIMBLE TABLET RUGGED PC CONTROLLER

Operating System ..... Genuine Windows® 7 Professional  
 Display ..... 7 inch color sunlight readable touch screen  
 Memory ..... 1 GB DRAM, expandable via SDIO memory card  
 Storage ..... 80 GB solid state hard drive  
 Interfaces ..... USB 2.0, RS232, Bluetooth® 2.1, WiFi (802.11b/g)  
 Camera ..... 2Mpx front-facing autofocus video and photo  
 Environmental Protection ..... IP67; MIL-STD-810G  
 Temperature Range ..... -30 °C to +60 °C operating range  
 Weight ..... 1.4 kg

## FARO FOCUS 3D LASER SCANNER

Scanning Range Faro Focus 3D X30 ..... 0.6 m to 30 m  
 Scanning Range Faro Focus 3D X130 ..... 0.6 m to 130 m  
 Scanning Range Faro Focus 3D X330 ..... 0.6 m to 330 m  
 ..... indoor or outdoor with upright  
 ..... incidence to a 90% reflective surface  
 Scanning Speed ..... Up to 976,000 points per second  
 Accuracy ..... ±2 mm at 10 m and 25 m each at 90% and 10% reflectivity  
 Battery Life ..... Up to 5 hours

## TRIMBLE TX8 LASERSCANNER

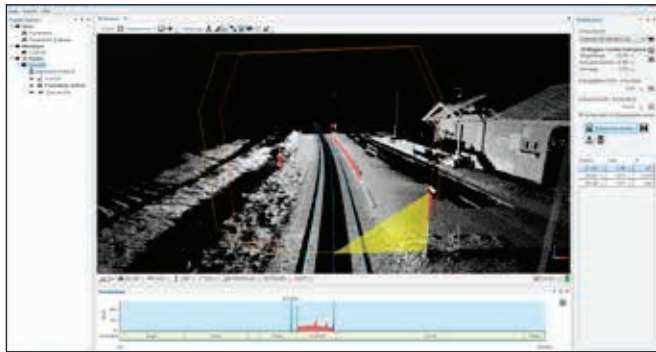
Scanning Range ..... 0.6 m to 120 m on most surfaces  
 ..... 0.6 m to 340 m with optional upgrade  
 Scanning Speed ..... Up to 1,000,000 points per second  
 Accuracy ..... <2 mm from 2 m to 120 m on 18-90% reflectivity in Standard mode  
 ..... <1 mm from 2 m to 80 m on 18-90% reflectivity in High Precision mode  
 Scan time per battery ..... ~ 2 hours

## TRIMBLE S9 TOTAL STATION

Weight ..... 5.5 kg  
 Angle Accuracy ..... 0.5" or 1"  
 Standard Accuracy Distance Measurement ..... 0.8 mm + 1 ppm or 1 mm + 2 ppm

## TRIMBLE R10

Communication ..... USB, Bluetooth®, WiFi  
 Ingress Protection ..... IP67; MIL-STD-810F  
 Temperature ..... -40 °C to +60 °C  
 Weight ..... 1.12 kg  
**Power**  
 Battery Type ..... 3.7 Ah Lithium-ion smart battery  
 Life ..... 5 hours



Specifications subject to change without notice



Trimble Authorized Distribution Partner

**NORTH AMERICA**  
 Trimble Navigation Limited  
 10368 Westmoor Dr  
 Westminster CO 80021  
 USA

**EUROPE**  
 Trimble Railway GmbH  
 Korbacher Straße 15  
 97332 Wiesentheid  
 GERMANY  
 www.trimble-railway.com

**ASIA & SOUTH-PACIFIC**  
 Trimble Navigation  
 Singapore Pty Limited  
 80 Marine Parade Road  
 #22-06, Parkway Parade  
 Singapore 449269  
 SINGAPORE