

GEDO IMS-SCAN

HIGHLY PRODUCTIVE KINEMATIC LASER SCANNING

The Trimble GEDO IMS-Scan system is a fast and efficient solution to collect detailed information about the track and surrounding features.

With Trimble GEDO IMS-Scan you can quickly gather precise, high-resolution data for use in track clearance assessments and facilities management. The collected data provides the basis for BIM-compliant planning, as-built documentation for GIS or the final inspection after completion of a construction project. In addition, clearance control can be carried out based on the current track position or a new design.

TRIMBLE GEDO SYSTEMS

Trimble GEDO systems can be used for various applications in measuring, recording and analyzing track position and track quality, as well as for construction and maintenance activities. The instruments and software of the Trimble GEDO systems are specifically designed for the various surveying tasks on railway lines and simplify the work in the field and in the office. Using standard data formats, information can be exchanged with leading software products for track planning and track maintenance machinery.

As-built documentation with Trimble GEDO IMS-Scan

The Trimble GEDO IMS-Scan system combines the Trimble GEDO CE 2.0 track measuring trolley with the Trimble GEDO IMU and a laser scanner.

The Trimble GEDO IMU is a high-precision multi-sensor system based on inner measurement accuracy. This guarantees a very high internal accuracy of the measurement. Based on the data of the laser scanner, the georeferencing is done using reference points along the track. This results in a high-resolution survey, combining an absolute 3D referenced point cloud and the as-built track position in one single measurement.

Basis for BIM-compliant planning

The generated 3D point cloud forms the basis for the modelling of a BIM-compliant planning. This can be done either directly with Trimble Realworks analysis software or via corresponding interfaces with other program systems (i.e. SketchUp).

Asset data collection

Object information can be obtained from the collected data for transfer and updating into a Geographical Information System (GIS). If the system is used after all construction work has been completed, the data serves as a basis for the as-built documentation and for comparison with the original planning.

Clearance inspection

The 3D point cloud and track trajectory serves as basis for checking the clearance. The inspection for any kind of infringement along the track can be performed either with static clearance envelopes or 3D wagon profiles. For the track reference, both the as-built track position and a new track design can be used.

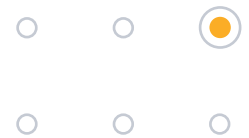
Key Benefits

- ▶ Fully integrated solution for track recording and high-resolution asset data collection along the railway corridor
- ▶ Consistent recording of track position, gauge and cant in combination with laser scanner data
- ▶ Use of a universal track measuring device with modular expansion options
- ▶ Short initialization time enables rapid on-site deployment
- ▶ Time consuming geodetic station setup with related restrictions no longer required
- ▶ Easy handling and intuitive user interface
- ▶ High productivity and flexibility lowers costs and reduces personnel expenses
- ▶ Georeferencing with reference points along the track
- ▶ System extension with GNSS for absolute referencing without fixed points possible



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GENERAL

APPLICATIONS

Survey of existing railway lines and asset data collection
Clearance analysis

PERFORMANCE

Relative accuracy	0,3 mm for standard chord length (20 m)
Relative accuracy scan points	< 5 mm in 7 m distance
Absolute accuracy (depending on ref. points)	typ. < 20 mm in 7 m distance
Initialisation time	5 minutes
Measurement frequency	200 Hz
Measurement speed	up to 5.000 m/h

SYSTEM REQUIREMENTS

Supported instruments	Trimble GX50 laser scanner Trimble TX6/TX8 laser scanner Trimble GNSS systems (i.e. R10, R12, R12i)
Controllers	Trimble TSC7, T7 and T100 controllers (Windows® OS)

CONFORMITY

EN 13977	Portable trolleys for rail applications
EN 13484-4	Measurement of relative track geometry

TRIMBLE GEDO CE 2.0 WITH TRIMBLE GEDO IMU

Description	Track-mounted trolley with IMU (Extensions are possible)
Gauges	1.000 mm, 1.067 mm, 1.435 mm, 1.520 mm, 1.524 mm, 1.600 mm, 1.668 mm, 1.676 mm (other gauges on request)
Weight	39,5 kg ⁽¹⁾

GAUGE MEASUREMENT

Range	-20 mm to +60 mm
Accuracy	±0,3 mm

CANT MEASUREMENT

Range	±9° or ±235 mm at 1.435 mm track gauge
Accuracy	±0.5 mm (static)

BATTERY

Type	Trimble S-Series Li-Ion, rechargeable
Life	6 - 8 h (hot-swappable)

COMMUNICATION

Connection to control unit	Bluetooth®
IMU / GX50	WLAN

TRIMBLE GEDO GX50 DUAL HEAD LASERSCANNER

Measurement range	0,6 m up to 80 m
Accuracy ⁽²⁾ / Precision ⁽³⁾	2 mm / 2,5 mm @ 30 m
Measurement rate	1 MHz
Scanning speed	240 Hz
Field of view	360°
Battery life	3 h (Dual Head)

TRIMBLE R12i GNSS SYSTEM

Interfaces	USB, Bluetooth, WiFi
Weight	1,12 kg
Battery life	5 h

⁽¹⁾ incl. Trimble GEDO GX50 Dual Head laser scanner and Trimble TSC7
⁽²⁾ Accuracy is the degree of correspondence between a measured value and its actual (true) value

⁽³⁾ Precision is the degree to which further measurements show the same results



Specifications subject to change without notice.

NORTH AMERICA

Trimble Inc.
10368 Westmoor Dr
Westminster CO 80021
USA

EUROPE

Trimble Railway GmbH
Korbacherstraße 15
97353 Wiesentheid
GERMANY
gedo.trimble.com

ASIA-PACIFIC

Trimble Navigation
Singapore PTE Limited
3 HarbourFront Place
#13-02 HarbourFront Tower Two
Singapore 099254
SINGAPORE

