



# Trimble Indoor Mobile Mapping Solution (TIMMS)

## THE OPTIMAL FUSION OF TECHNOLOGIES FOR CAPTURING SPATIAL DATA OF INDOOR AND GNSS-DENIED SPACES

TIMMS is a manually operated push-cart designed to accurately model interior spaces without accessing GPS. It consists of 3 core elements: LiDAR and camera systems engineered to work indoors in mobile mode, computers and electronics for completing data acquisition, and data processing workflow for producing final 2D /3D maps and models. The models are "geo-located", meaning the real world position of each area is known.

With TIMMS a walk-through of an interior space delivers full 360 degree coverage. The spatial data is captured and georeferenced in real-time. Thousands of square feet are mapped in minutes, entire buildings in a single day.

TIMMS is ideal for applications such as situational awareness, emergency response, and creating accurate floor plans. All types of infrastructure can be mapped, even those extending over several city blocks:

- Plant and factory facilities
- High-rise office, residential, and government buildings
- Airports, train stations and other transportation facilities
- Music halls, theatres, auditoriums and other public event spaces
- Covered pedestrian concourses (above and below ground) with platforms, corridors, stair locations and ramps
- Underground mines and tunnels

### YOUR BENEFITS

- High efficiency, accuracy and speed
- Lower data acquisition cost for as-builts
- Reduced infringement on operations

## Key Features

- ▶ No need for GNSS
- ▶ Little or no LiDAR shadowing
- ▶ Long-range LiDAR
- ▶ Self-contained
- ▶ Simple workflow
- ▶ Fully customizable
- ▶ Use survey control for precise georeferencing



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## TIMMS COMPONENTS

Mobile Unit & Mast  
TIMMS acquisition system  
Inertial Measurement Unit (IMU)  
POS Computer System (PCS)  
LiDAR Control Systems (LCS)  
One LiDAR  
Supported scanners include:  
Trimble TX-5  
FARO Focus X-130, X-330, S-70-A, S-150-A, S-350-A  
One spherical camera (6 camera configuration)  
Field of View (FOV) >80% of full sphere  
2 MegaPixel (MP) per camera  
Six (6) 3.3 mm focal length  
1 meter/second (Up to 4 FPS)  
One operator and logging computer  
16 batteries (8 + 8 spare)  
2 battery chargers

## SOFTWARE COMPONENT

Realtime monitoring and control GUI  
Post-processing suite

## SYSTEM DELIVERABLE

Georeferenced trajectory in SBET format  
Georeferenced point cloud in ASPRS LAS format  
Georeferenced spherical imagery in JPEG format  
Georeferenced raster 2D floorplan

## USER SUPPLIED EQUIPMENT

PC for post processing  
Windows 7 64-Bit OS  
Minimum of 300 GB of disk  
32 gigabytes of RAM required (64 recommended)

## USER SUPPLIED SOFTWARE

Basic LiDAR processing tools: recommended functionality  
LAS import compatible  
Visualization  
Clipping  
Raster to Vector tools (manual and/or automated)

## PERFORMANCE

Onboard power  
Up to 4 hours without charge or swap  
Hot swappable for unlimited operational time  
Data storage  
1 TB SSD  
Operations  
Nominal data collection speed at 1 meter per second  
Maximum distance between position fix 100 meters  
Typical field metrics  
LiDAR point clouds - 1 cm relative to position accuracy\*  
Productivity – in excess of 250,000 square feet per day

## PHYSICAL DIMENSIONS

Height with mast low.....173 cm  
Height with mast high.....221 cm  
Distance to wheel with mast low (front to back).....80 cm  
Distance to wheel with mast high (front to back).....88 cm  
Distance between wheels (outside surface of wheels).....51 cm  
Weight.....109 lb or 49.5 kg



\*rms derived by comparison of TIMMS with static laser scan, results may vary according to building configuration and trajectory chosen.

\* System performance may vary with scanner type and firmware version. Published values based on X-130.



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