TIMMS™: FAST, ACCURATE & COST-EFFECTIVE INDOOR MAPPING

Designed for ease-of-use and maneuverability, TIMMS is a high-productivity tool for accurately measuring, georeferencing and modeling interior spaces of any size and shape.

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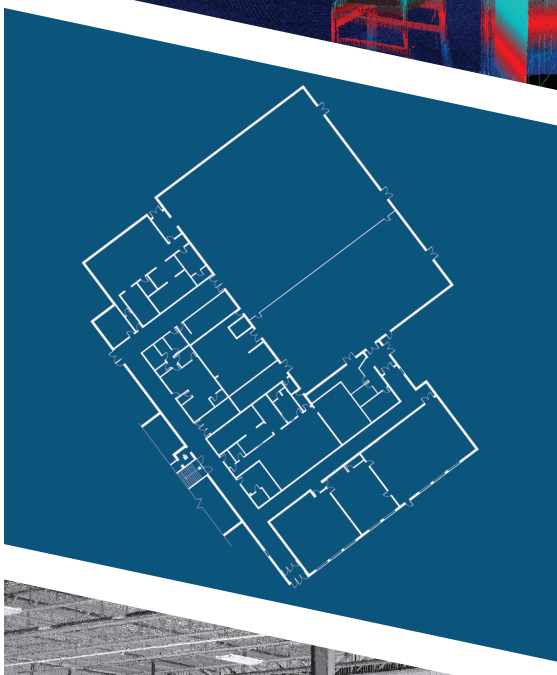

Once unimaginable, Trimble has made efficient, accurate indoor mobile mapping a reality.

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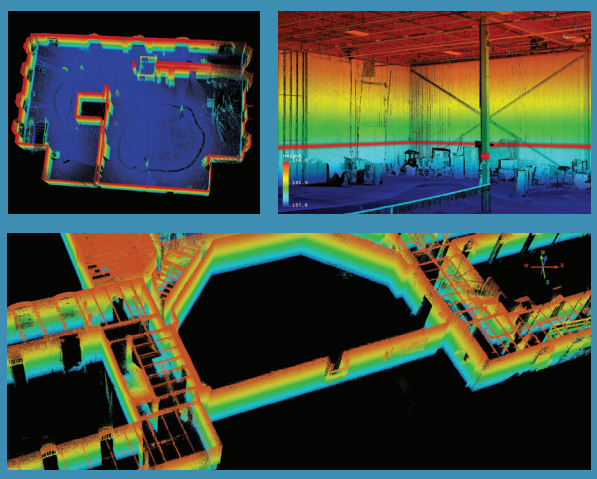
TIMMS is a high-productivity tool for accurately measuring, georeferencing and modeling interior spaces.

The Trimble Indoor Mobile Mapping Solution (TIMMS) is the optimal fusion of technologies for capturing spatial data of indoor and other GNSS-denied areas of all sizes and locations. It provides both LiDAR and spherical video, enabling the creation of accurate, real-life representations (maps, models) of an interior space and all of its contents; every object in the interior space, including desks, chairs, stairs, and doors appear in the plan.

TIMMS produces geo-located maps and models – the real world positions (latitude, longitude, elevation) of each area of the surveyed building and all of its contents are known.

Because of its high efficiency and speed, TIMMS is very effective for as-built environments of all sizes, including very large spaces with multiple rooms (even those extending over several city blocks). 3D indoor geospatial views of all kinds of infrastructure can be created:

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



TIMMS mobile indoor mapping solution provides tremendous flexibility in collecting, accessing, displaying, and analyzing indoor spatial data. Achieve:

- High accuracy
- High speed collection: Map over 240,000 square feet in a single day
- One data collect, multiple users (address needs of many with one scan)
- Lower data acquisition cost
- Reduced infringement on operations
- Fast and secure worldwide access to data

TIMMS consists of four core elements:

1. Spherical camera
2. LiDAR engineered to work indoors in mobile mode
3. Computers and electronics for completing data acquisition and data processing for producing final 2D / 3D maps and models
4. Applanix Advanced Positioning System

TIMMS is designed to maximize performance in the most restricted, confined and difficult-to-navigate indoor spaces. Designed with the user in mind, it is very easy to maneuver, lift, ship, and operate. Whatever your building type and shape, TIMMS delivers exceptional results, both in accuracy and ease-of-use.

Easily operated and highly maneuverable, TIMMS accurately measures and models interior spaces without accessing GPS.

Why TIMMS?

Fast, Easy, Low-cost: Maximize Your Productivity

With TIMMS a walk-through of an interior space delivers full 360 degree coverage. Capture and georeference spatial data in real time. Map thousands of square feet in minutes: entire buildings in a single day.

Complete, All-In-One Solution

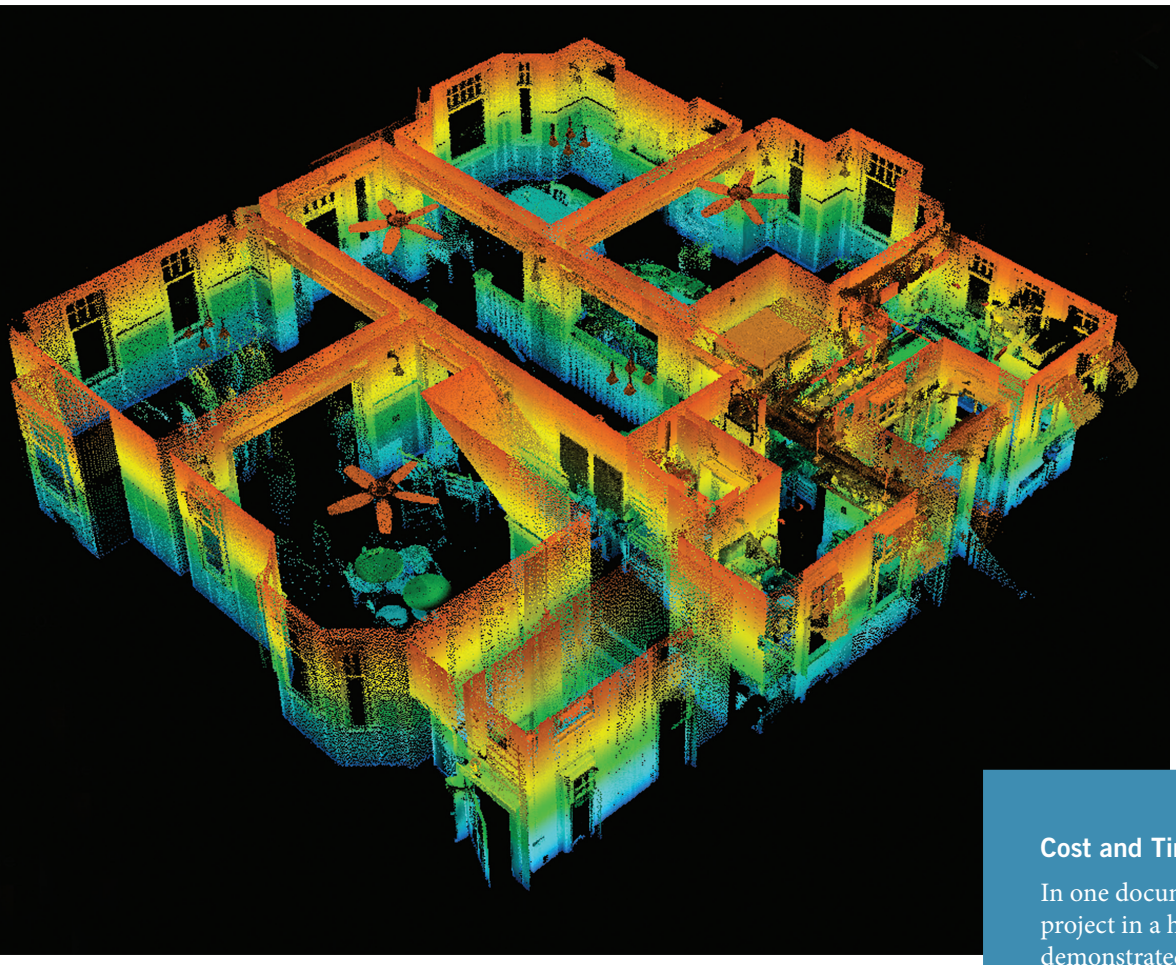
TIMMS includes everything you will need to do indoor surveys. All hardware and software is specifically designed and integrated to deliver full indoor mobile mapping scanning capability quickly and easily. Applanix expert customer support is also available for every project.

Highly Qualified Applanix Experts Ensure Your Success

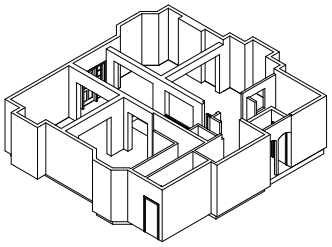
Our experienced team of survey engineers, geospatial experts, and quality assurance personnel means you get the highest quality solution and the highest level of performance. Every Applanix product comes with a company commitment to world-class support. Applanix is here to ensure your success.

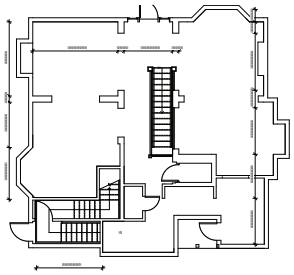
Tremendous Technical Advantages

- Little or no LiDAR shadowing
- Extended range of operations
- Simple workflow
- Fully customizable
- Data can be utilized with existing enterprise GIS systems



TIMMS scan and resulting maps/models





Cost and Time Savings

In one documented public safety project in a high school, TIMMS demonstrated a 50% cost savings & 92% reduction in delivery time over traditional data acquisition methods.

TIMMS Applications: Turning Data into Decision-Ready Intelligence

Rapid Response / Public Safety / Law Enforcement

Accurate and up to date spatial information of public buildings offers many safety benefits to responders and to the public:

- Detailed 360 degree imagery provides responders with total situational awareness before entering. Layout and contents are fully known, meaning no surprises.
- Data is available through the internet behind your own firewall to multiple decision makers in multiple locations, enabling informed decisions.
- Data enables detailed preparation and training for specific buildings / areas.

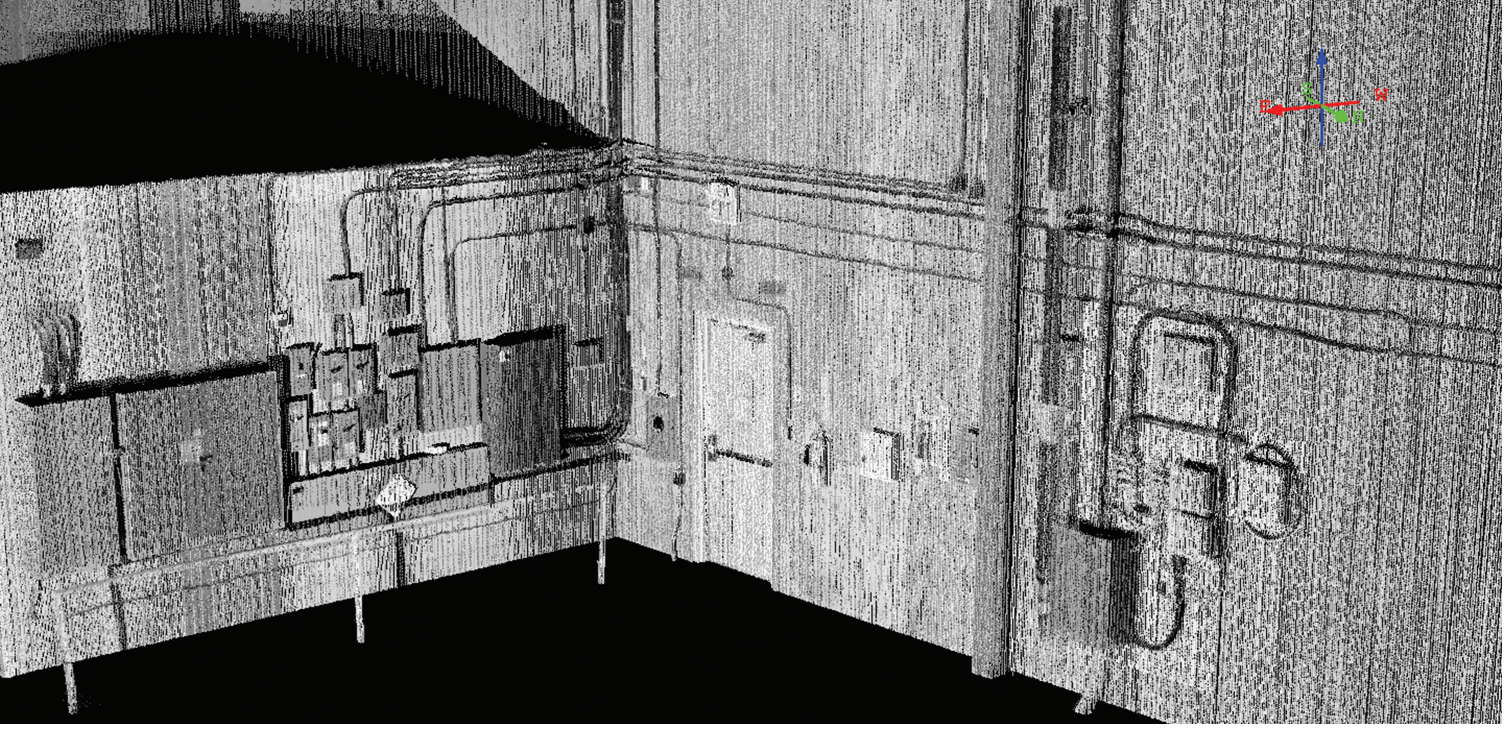
Commercial Building Management / Space Utilization / Planning & Design

By quickly and accurately determining the current "as-built" layout and dimensions of existing buildings, TIMMS delivers critical intelligence for building management including managing security issues, health and safety concerns, maintenance, modernization and restoration planning, and space utilization.

Because of its high efficiency and speed, TIMMS is very effective for built environments of all sizes, including very large areas extending over several city blocks such as malls and underground concourses. This enables pedestrian traffic planning, retail concession management, and base mapping for location-based services of all types.

As-Built Modeling

Increasingly 3D models, 2D floor plans, and Computer Aided Design (CAD) are being used to increase productivity in building design, construction, and maintenance. TIMMS generated interior spatial data – including building geometry, spatial relationships and geographic information –facilitates the production of such models. For Owners/Facility Managers, these jobs can lead to short and long term operational savings.



Case Studies

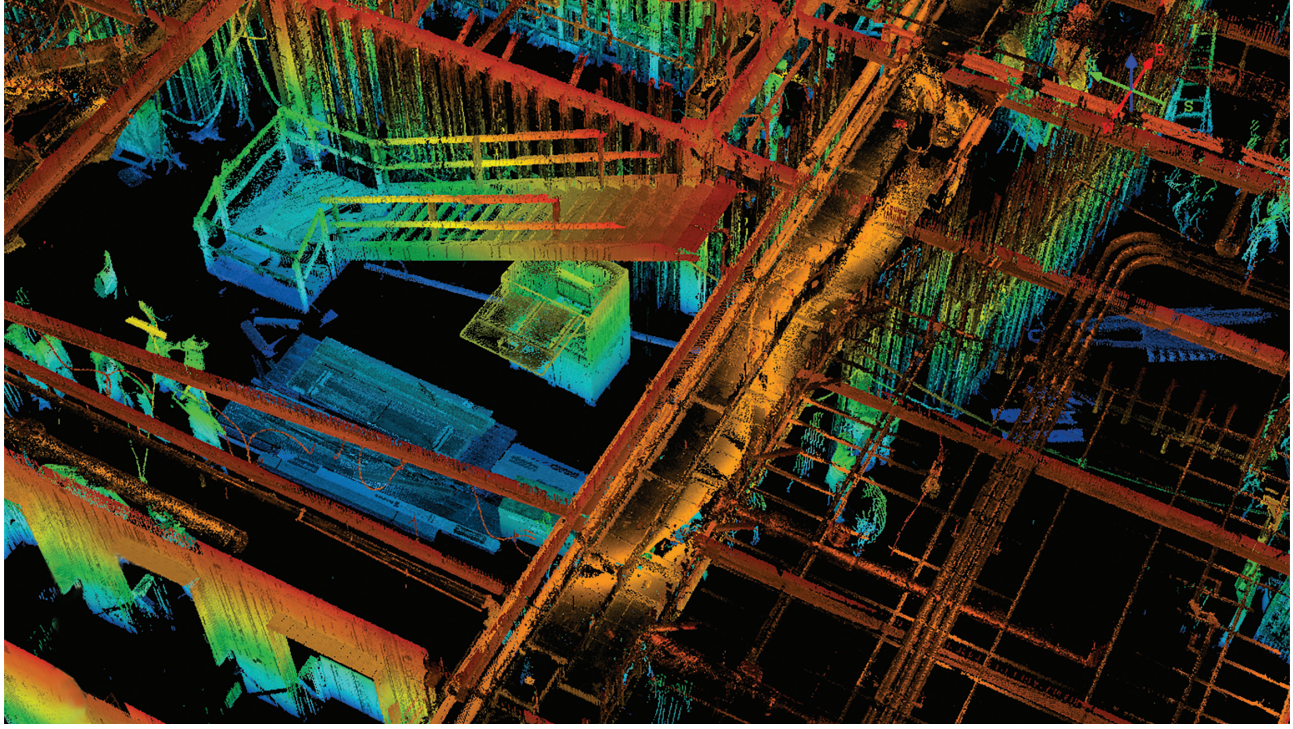
3-Dimensional Indoor Coverage for 50% Less Than Static Methods at St Mary's

St. Mary's University College in Calgary was relocated to the historic Father Lacombe Centre in 1999. The site has undergone extensive construction and renovation since then, most recently with the full renovation of the school's gymnasium into a brand new athletics centre. The campus includes several heritage buildings that require ongoing preservation and documentation.

Building Documentation Needed: The many recent changes, coupled with the historic nature of the site, meant that comprehensive and up-to-date plans and blueprints for most of the buildings simply did not exist. St. Mary's required up-to-date building plans that could be used for campus navigation, safety and emergency planning, and space allocation.

Solution: InView Solutions, Ltd. used Trimble's Indoor Mobile Mapping System (TIMMS) to provide the needed data. The InView team scanned six major structures on the St. Mary's University College Campus in just 20 hours. From these initial scans, the team created a total of 14 floor plans to cover all buildings, as well as a full campus virtual tour. The team later performed a second scan once the renovations in the new fitness centre were completed.

This dataset was integrated with the original scan to provide a completely updated model, as well as a before/after virtual panorama of the facility. The entire process – from data collection to the production of complete digital models of the entire campus – took just 55 hours to complete at a cost saving of over 50% compared to traditional static methods.



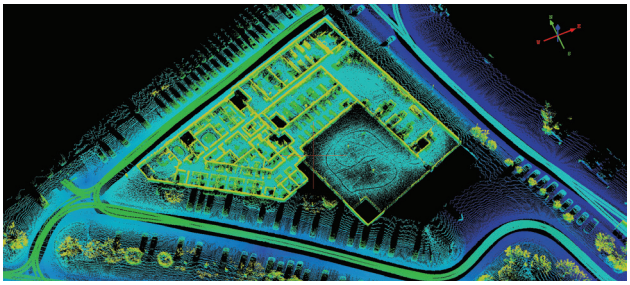
Public Safety: TIMMS Reduces Cost by More Than 50% and Time-to-Completion by More Than 80%

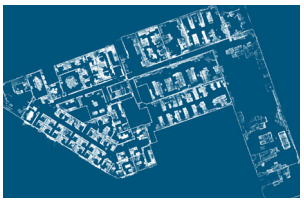
Emergency Planning and Emergency Response are two important aspects of overall school safety and security, but both are difficult to act upon without up-to-date and accurate indoor layout information. Because accurate blueprints of Northwood-Kensett High School of Worth County, Iowa were non-existent, first responders were faced with entering the building "blind" to its structure and layout, and unsure of where to go and what path to take.

The Challenge: Officials required an easy to use and highly accurate digital blueprint of the entire school, with exact distances and measurements of every single room, closet, hallway and doorway in the structure to facilitate public safety

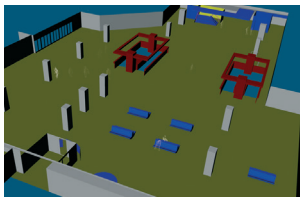
The Solution: A simple walk-through with TIMMS of the school is all it took to achieve full 360 degree indoor coverage. Georeferenced spatial data was captured accurately and quickly as the mobile system moved through the building. Maps and models, covering all 75,000 sq ft in all 90 rooms of the inside of the building, were created. Scanning took just 5 hours.

Results: Enormous Cost and Time Savings: TIMMS final product was delivered in 92% less time than static methods, and the cost of using TIMMS to the school was 50% lower as well.



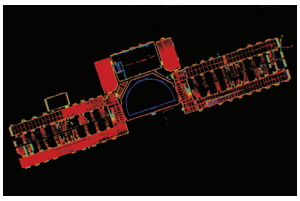


Floor plan created for Applanix HQ cubicle



TIMMS – 3D LiDAR Based Model of Philadelphia Subway Concourse

TIMMS – Spherical Video of an underground concourse



The Old Don Jail in Toronto – All Ceiling Beams/Joists Observed

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