

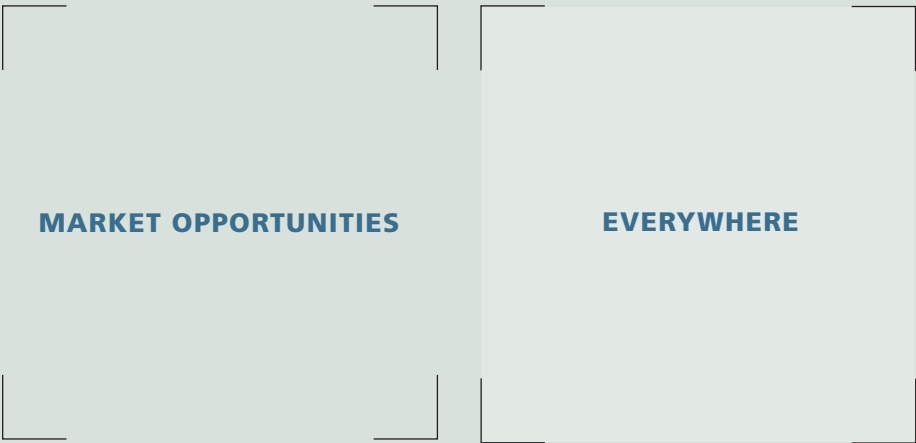


# MORE THAN GPS

# MORE THAN EVER



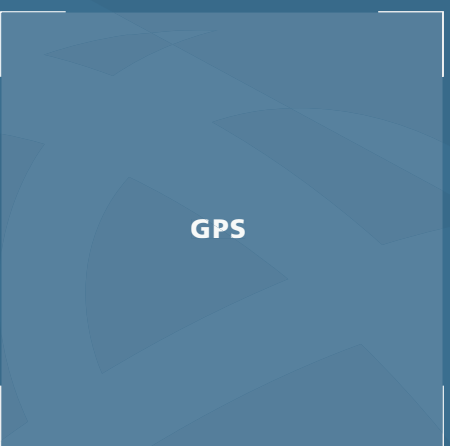
Trimble is a leading provider of advanced positioning solutions that maximize productivity and enhance profitability. Though best known for GPS technology, Trimble integrates a wide range of positioning technologies including GPS, laser, optical and inertial technologies with application software, wireless communications, and services to provide complete commercial solutions. Its integrated solutions allow customers to collect, manage and analyze complex information faster and easier, making them more productive, efficient and profitable.



Many industries are adopting Trimble’s positioning solutions to transform their businesses through increased productivity and a greater return on their investment. Trimble has a deep understanding of the markets it serves that enables the development of unique offerings to diverse industries such as engineering and construction, agriculture, mapping, transportation and wireless communications infrastructure. Proven experience across an array of markets allows Trimble to integrate technology and ideas from one industry to another, bringing a unique perspective to customers. Trimble helps customers leverage their investment with software, services, training and industry expertise to make them more successful.

Trimble products are used in over 100 countries around the world. More than 2,200 employees in over 20 countries, coupled with a highly capable network of dealers and distribution partners serve and support our customers.

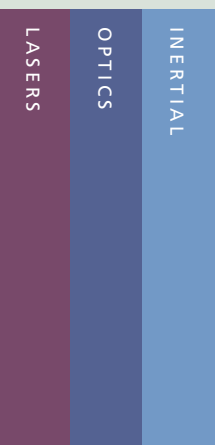
For over 25 years, Trimble has created unique positioning products that help customers grow their business. Our portfolio includes over 700 patents and serves as the basis for the broadest positioning offerings in the industry. Trimble augments its organic product development with strategic acquisitions to bring the latest positioning technologies to a wider market.



# MORE REASONS

# POSITIONING TECHNOLOGIES FOR COMMERCIAL APPLICATIONS

Global Positioning System (GPS) is a constellation of 24 satellites orbiting the Earth. These satellites have very accurate clocks and use radio signals to broadcast location information. Using satellites, a GPS receiver on the ground picks up the signals from the satellites to determine a location anywhere in the world. By adding sophisticated software, a base station and communications link, location can be accurately determined to the centimeter level.



In addition to its GPS expertise, Trimble offers complete positioning solutions for a variety of applications.

## LASERS

Lasers are used in a range of applications to accurately determine level, grade, vertical alignment and distance. Spinning lasers emit a rotating 360-degree beam of light that is used as vertical, grade or horizontal reference, a difficult to establish yet critical datum for engineering and construction projects. Lasers are also used for measuring distance at high accuracy by determining phase shift or beam return time.

Trimble also uses laser technology combined with a unique scanning methodology to capture the shapes of physical structures or scenes and convert them into digital format, known as 3D laser scanning. This technology is revolutionizing high-end civil engineering and survey projects.

## OPTICS

Optics are an integral part of an essential surveying instrument called a total station. This instrument enables the surveyor to compare locations in relation to one another. Optics allow survey and construction professionals to accurately pinpoint the exact feature to be measured while lasers measure the distance. In the past, making sure the optic lenses were positioned correctly within the instrument was an art. Today, sophisticated software helps calibrate these sensitive instruments, improving the accuracy and productivity of the surveyor.

## INERTIAL

Inertial technology senses changes in motion and is primarily used when GPS signals are obstructed. Starting with an initial location based on a landmark, inertial technology uses accelerometers and gyroscopes to determine the successive position based on movement. Inertial technology complements GPS and is currently used for aerial photogrammetry, vehicle tracking, high-end road construction and marine applications.

## PREPARING FOR THE FUTURE

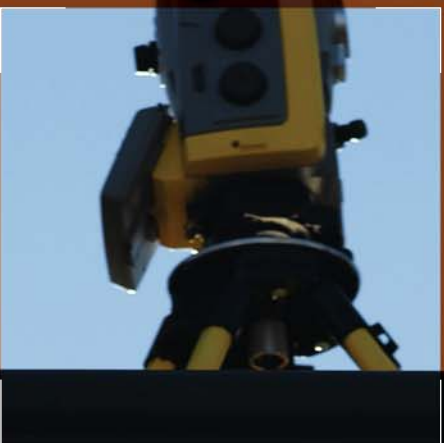
The Galileo satellite radio navigation system proposed by the European Union offers advantages to Global Navigation Satellite System (GNSS) users by providing additional satellites, additional signals and compatibility with GPS. Trimble fully supports this advancement in the GNSS market.

As we have done with products that capitalize on next generation GPS capabilities, we are committed to having Galileo-compatible products available for our customers well in advance of Galileo system availability. In the case of next generation GPS, our compatible products were available a year ahead of the first L2C-capable satellite launch. Trimble has also developed products for the coming L5 GPS signal.

Likewise, we will offer equipment with Galileo capability well ahead of the time when production satellites are launched. In the meantime, introducing products that take advantage of next generation GPS will continue to be our near-term focus. It is our goal to offer the most productive and competitive equipment that addresses our customers' needs both now and in the future.



MORE INFORMATION



Trimble uses advanced positioning technologies combined with software and wireless communications to create solutions for the engineering and construction market. These solutions improve accuracy and productivity in all phases of the construction process from the initial survey, to planning and design, through site preparation and into the building phase.

**EVERYWHERE**

### **SURVEY**

Trimble provides a complete line of surveying solutions for a variety of applications: cadastral and boundary surveying, engineering and construction, seismic, exploration and natural resources, utilities and transportation, geodetic and control, marine and military. Trimble survey solutions provide unsurpassed quality and performance by combining innovative technology with market leading software and communications in a complete package. By providing a wide range of solutions based on GPS and optical technologies, Trimble successfully addresses the needs of surveyors worldwide. Products are easy to use and enable the surveyor to deliver accurate, timely information.

### **INFRASTRUCTURE**

Trimble also provides productivity to the user through virtual reference station (VRS™) technology. The VRS network solution is an integrated system including a GPS receiver, software and a communication link such as GSM or GPRS (a mobile telephone or radio link). Trimble VRS technology allows RTK centimeter positioning within a network with distances of up to 70 km between reference stations. Governments and other organizations are implementing these networks to provide surveyors access to positioning information and required reference data.

### **3D LASER SCANNING**

Trimble's laser scanning technology solutions combine high speed optical measurements with advanced computing systems to acquire several thousand data points each second. Trimble scanners provide fast results and substantial cost savings to civil engineers, infrastructure builders as well as power and utility companies who need to survey complex areas in difficult conditions. For example, surveying a large power plant or a busy stretch of roadway can be completed in less time with fewer risks. Three dimensional laser scanning does not place personnel in unsafe locations to obtain the survey data required. Coupled with Trimble software, 3D laser scanning allows contractors to complete critical inspections and analysis of their projects.

### **INTEGRATED SURVEYING**

Pioneered by Trimble, Integrated Surveying™ solutions are a growing trend that increases surveyors' productivity and profitability. It allows surveyors to seamlessly change measurement technologies, and maintain a common user interface and data reference. The increase in computing power and software capability that is now available gives surveyors all the functionality of their office computer in a portable environment. A variety of Trimble survey controllers provide a flexible solution that operates in the GPS or total station environment, using a single interface and data file.

# MORE CONTROL





## CONSTRUCTION

Trimble has the most complete range of positioning solutions for the construction market including: design and data prep, earth-moving grade control, site positioning, general and interior building and asset management. Trimble solutions are based on decades of experience in developing positioning products for the harsh construction environment. Trimble lasers, total stations, GPS positioning and wireless technologies give customers more control over their job site. Through all phases of the construction process, Trimble helps streamline work processes, minimize downtime and re-work which increases productivity and profitability for the contractor.

## DESIGN AND DATA PREP

Today, digital information created for the site design and project plan is being used for machine control to ensure accurate grading—and for site positioning during and after project completion. Trimble has a suite of powerful software for design, estimating takeoff and data preparation, as well as interfaces to leading third-party design packages. Information technology from Trimble migrates data between the design engineer and the earth moving contractor which streamlines the workflow and reduces errors from manual re-entry.

## GRADE CONTROL

Trimble offers an extensive line of Grade Control Systems. From laser or sonic based through to 3D, these rugged systems are easy to use, fully upgradable and flexible enough to meet a wide range of application and jobsite requirements. Each system can be used as a full control system or as a guidance system. Trimble's 3D systems integrate high precision GPS, lasers and optical positioning with a sophisticated control system and extensive software, enabling operators to precisely grade complex sites up to an accuracy of five millimeters. This precision reduces rework and increases job site productivity by more than 25 percent. Trimble Grade Control Systems can be installed on machines from any vendor and use industry-standard interfaces to deliver a system that allows contractors to easily add more sensors and upgraded software as needed to meet specific machine and application requirements.

## SITE POSITIONING

Trimble Site Positioning Systems are designed to provide contractors with state-of-the-art construction positioning solutions. Trimble gives non-surveyors in site preparation and heavy highway, mining, landfill and waste disposal, and marine applications the ability to quickly resolve problems on site and the flexibility to complete any task. Contractors can track, report, validate and control workflows from receipt of initial designs to project completion.



EVERYWHERE

Trimble Site Positioning Systems give site foremen, supervisors, grade checkers and site engineers the tools they need to help run machines on site, reduce downtime and resolve issues as they arise—without office assistance.

## CONSTRUCTION ASSET MANAGEMENT

Trimble offers a complete, scalable solution for managing practically all types of assets typically found on construction sites, including mobile, and portable assets as well as personnel. The solution enables construction contractors to: centralize and simplify management of onsite operations, improve asset productivity, help allocate resources effectively, improve safety, reduce maintenance and fuel costs and assist with theft recovery, if necessary.

## BUILD

Trimble offers a portfolio of construction positioning solutions specifically designed to meet construction layout, alignment and measurement needs for both commercial and residential construction. Powerful yet easy to use 3D positioning tools allow contractors to take control of their construction layout so they can perform layout tasks more efficiently. Our exterior and interior lasers allow for fast and accurate leveling and alignment of foundations, floors, walls, ceilings as well as the positioning of fixtures and calculation of areas and lengths. For underground utilities, pipe lasers allow for the accurate alignment of pipe work and are rugged enough to work in the harshest of environments. Trimble continues to stand at the forefront of construction positioning technology, with rugged, reliable and accurate positioning tools for a range of jobs that improve productivity and quality even with today's more complicated designs.

# MORE FREEDOM



ENCANA  
CAUTION  
AHEAD 1/4 MILE

ENCANA  
CAUTION  
AHEAD 1/4 MILE

ENCANA

The ability to access and share significant amounts of information, together with the knowledge of location through wireless connections, is impacting workers who are either continuously on the move or who work in remote locations. This ability to collect and share information between the field and the office is making mobile workers more productive, streamlining asset management, improving worker safety and ultimately providing better customer service.



**EVERYWHERE**

### GEOGRAPHIC INFORMATION SYSTEMS (GIS)

Businesses and agencies that require timely, accurate location information can benefit from the efficiency and productivity provided by using GPS technology for GIS data collection and data maintenance. All over the world, local, regional and federal government agencies, utility companies, and natural resource organizations utilize Trimble's GPS/GIS solution to manage their geographically dispersed assets or resources. This solution consists of a GPS-enabled, rugged handheld device that includes application software. This handheld is the key tool used by field workers to collect and maintain field data. Increasingly, Trimble GIS solutions are also wirelessly enabled, allowing highly efficient exchange of data between the office and the field.

Growing cities face the challenge of keeping pace with utilities and other services for its residents. Until recently, new utility features such as manholes, storm drains and utility poles, had to be manually entered into computer databases, which are time-consuming and error-prone. At the same time, accessing utility information in the field has been accomplished through paper map books that quickly become out of date. Trimble's wide variety of solutions can assist workers in mapping and recording data that is incorporated into an enterprise database accessible to all city departments.

For applications requiring higher accuracy (as in locating and relocating buried sewer pipes, gas pipelines and underground telecommunications cable), Trimble now offers a GPS/GIS receiver that delivers subfoot accuracy.

### CRITICAL INFRASTRUCTURE MANAGEMENT

Knowing precisely where assets are located is critical in the event of a natural or manmade disaster. Having information readily accessible and up to date will greatly aid in assessment, cleanup and rebuilding. Governments and utility companies around the world are using Trimble solutions to map all of their assets before disaster strikes.

### FLEET MANAGEMENT AND VEHICLE TRACKING

Trimble mobile resource management solutions empower fleet managers to significantly improve results by monitoring all relevant aspects of performance such as driver safety and equipment and labor utilization. The solution includes a vehicle mounted GPS receiver and a cell phone placed in the vehicle to be tracked. Dispatchers are able to receive frequent updates from vehicles as well as communicate with the driver. Trimble also provides subscription services to fleet managers, delivering a complete solution.

### READY MIX CONCRETE

The Trimble fleet management solution includes hardware, wireless connectivity, software and service. The automated system allows fleet managers and dispatchers to use real-time vehicle location and status without driver involvement. In addition, the system is compatible with most dispatch and enterprise software products used by ready mix concrete producers. Accurate and reliable information should provide increased fleet productivity and customer satisfaction. The vehicle mounted solution is available pre-installed or as an aftermarket product.

### ENTERPRISE FLEET MANAGEMENT

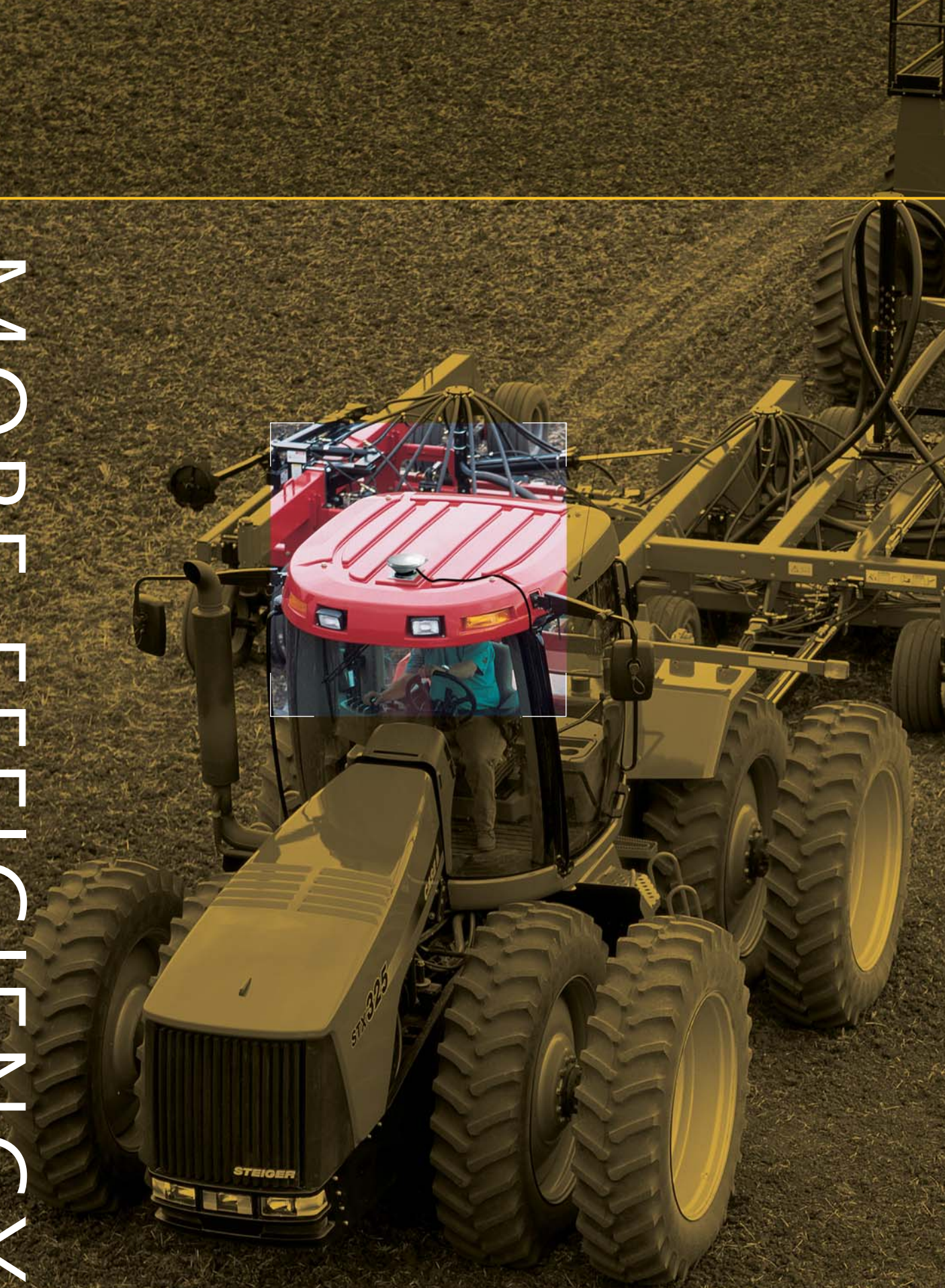
Telecommunications and utility companies as well as service fleets use Trimble's mobile resource solution to manage their local fleets. The system allows each local office to communicate, dispatch and monitor the status of their vehicles to improve fleet operations. Vehicles are monitored for safety and efficiency. The result is increased customer satisfaction and improved operating efficiency for fleet operators.

### DIRECT STORE DELIVERY

Today, there are approximately 200,000 vehicles that provide Direct Store Delivery (DSD) in the United States. Trimble supports the DSD market with a solution that automates the sale and delivery of high-volume consumer products such as baked goods, beverages, dairy, frozen foods and snacks to retail stores. Trimble provides real-time information to mobile field workers via handheld mobile computing devices to improve customer service, on-time deliveries and accurate invoicing. The turnkey solution includes mobile hardware and software that seamlessly integrates with a supplier's existing enterprise resource planning (ERP) software system.



MORE EFFICIENCY





Today, success in agriculture demands competitiveness on a global scale. Cutting costs, increasing yields and improving productivity are essential to the modern farmer. In responding to these challenges, farmers are significantly improving the way they work by applying innovative technology.



**EVERYWHERE**

Trimble has leveraged its expertise in GPS and machine control to develop guidance solutions for the agriculture market. GPS-enabled guidance solutions allow farm vehicles, such as tractors, to operate with a high level of control and precision. As a result, many farm operations, such as planting, chemical and fertilizer application, and harvesting can now be performed to maximize crop productivity while minimizing time in the field, labor and material inputs. The result is better yield and equipment usage and minimal use of chemicals and fertilizer. In addition, the environmental impact of chemicals and fertilizers is reduced as guidance technology eliminates excess application.

### **GUIDANCE**

Trimble's light bar guidance systems provide information at a glance so that the driver can steer the tractor on an accurate line. Assisted steering systems can be added to the light bar guidance products to achieve a hands-free farming solution. Automated steering systems are high-performance GPS navigation control systems that connect to a tractor's hydraulic steering system to automatically steer it in consistently straight rows. Each guidance system enables drivers to obtain minimum overlap and spend more time overseeing in-field operations such as bed preparation, planting and cultivating. Farmers using Trimble systems significantly increase productivity, efficiency and quality by improving accuracy, decreasing guess rows and reducing downtime due to fog or nightfall.

The Trimble systems are also used for plowing, discing, planting and grain drilling. Large agri-businesses harvest almost every day of the year, requiring the same schedule for field preparation. Because of this intense harvesting schedule, every field operation has to be done on time. The Trimble agriculture solutions enable large and small farm operations to meet their demanding schedules and improve their profitability.

### **WATER MANAGEMENT**

Trimble water management solutions can be used to keep water costs down and efficiently distribute water by maintaining grade. Trimble offers a wide range of products that work together—from GPS receivers and laser-based machine control systems to design software. These systems can be customized and upgraded.

# MORE ACCURACY



Trimble's advanced devices use GPS, wireless communications and other positioning technologies to create components and sub systems for original equipment manufacturers and system integrators. Trimble components are used in wireless infrastructure, automobile navigation, portable devices, scientific instrumentation, security and monitoring applications.



**EVERYWHERE**

### ASSET TRACKING

In the past personal vehicle tracking has been an expensive service, affordable to only a small percentage of customers. New devices are setting the standard for price and performance in the industry. Combining GPS and wireless communications technology in a rugged, compact package make asset tracking more affordable and easy to install. These new devices from Trimble offer application service providers and systems integrators the opportunity to provide vehicle monitoring, security and recovery services, and a host of other services.

### PRECISE TIMING

GPS provides precise time using extremely accurate atomic clocks on-board the GPS satellites. Using the GPS system, Trimble offers innovative timing products, including GPS smart antennas, modules and clocks in both off-the-shelf and custom configurations that transfer the precision of the atomic clocks on satellites to lower cost clocks on the ground. Trimble timing products are widely used by major telecommunications infrastructure suppliers to synchronize wireless communications networks and wide-spread computer networks, including the Internet. Other examples of Trimble timing product applications include air traffic control, personal communications services and security.

### EMBEDDED SYSTEMS

As the world becomes increasingly mobile and digital, the demand for position-centric data grows. Trimble provides GPS boards, modules, chipsets and technology licenses to major OEMs around the world. Customers use Trimble GPS to add positioning capability to their business and consumer products, including automobile navigation systems, PDAs, cell phones and many others. Trimble develops some of the smallest, lowest power integrated chipsets and software solutions for GPS applications that can be easily integrated into customers' products.



## WORLD CLASS SERVICE AND SUPPORT

Trimble is committed to not only delivering outstanding products but also providing worldwide, comprehensive service and support. Trimble has service and support offices around the world combined with an extensive network of certified dealers and distribution partners to deliver technical and service assistance to customers. In addition, comprehensive training and support information can be found on our website.

For more information on Trimble products and services, contact your local dealer or representative or visit us at [www.trimble.com](http://www.trimble.com).

# TRIMBLE

## TRIMBLE LOCATIONS WORLDWIDE

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**Trimble Dayton**  
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