Positioning

The global construction, geospatial, and agricultural industries are rapidly changing thanks to quantum leaps in communication and measuring technologies that are reshaping the way things are designed, built, grown, and managed. Topcon works to stay a step ahead of global needs by creating solutions that embrace and extend these advancements into the way work is done today, and will be done tomorrow. We do this by providing superior end-to-end business solutions for the surveying, agriculture, construction and mining industries by integrating high-precision measurement technology, software and data. It all combines to improve productivity and workflow to meet global demand for sustainable agriculture and infrastructure.

Mobile mapping system
Our high-speed measurement solutions combine GNSS, IMU sensors, 360 degree cameras, laser scanners, and other precision technologies on vehicles to gather 3D roadside data. This data is used in surveys, map creation, landscape simulations, and more.

3D Measurement

High-accuracy aerial mapping
Easily create aerial maps at any time, in any location. Topcon solutions quickly deliver high-accuracy aerial imaging for inspection and monitoring or survey and mapping applications. High-resolution georeferenced aerial images can be taken from various heights within set GNSS tolerances and offer an alternative or complement to conventional methods.

IT Agriculture

On-the-go crop canopy sensors
Our growth sensors use laser technology for non-contact measurements of crop growth status. Vehicle-mounted measuring of crop nutrient status enables real-time adjustments to fertilizer volume, thereby contributing to optimal crop growth and higher yield.

3D Measurement

IT Construction

Machine control system
Topcon high-precision GNSS receivers, total stations, and lasers are combined with sensors, hydraulic valves and controllers to create systems that achieve automated blade control that precisely follows 3D design maps. These systems are greatly contributing to the improved efficiency of the infrastructure industry.

IT Agriculture

Agricultural auto-steering system
Our GNSS receivers and guidance displays in tractors achieve automated handling and driving control. High-precision operation improve work efficiency and contributes to the reduced use of fertilizer and other plant protection products.

IT Agriculture

Farm management solution
Our livestock and grain control sensors precisely measure data critical to farming processes. We utilize weight sensors and control systems to provide farmers better solutions for feeding, planting, fertilizing and harvest.

3D Measurement

Survey/Construction

Total station
Total stations are used by many surveyors and construction companies to measure distance and angle to calculate precision positioning information. Our diverse product lineup includes instruments with auto-collimation and auto-tracking functionalities, advanced imaging capabilities, entry-level offerings and more.

3D Measurement

3D laser scanner
Topcon 3D laser scanners enable high-speed acquisition of non-contact, high-precision 3D point-cloud data that is widely used in surveys of structures, disaster areas, archaeological sites as well as in applications such as data management and maintenance for buildings.

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Infrastructure development for enriched and developing societies requires productive and practical use of space as the world becomes more densely populated. Surveying equipment is vital to achieving accurate measurements of positioning information that will enable the efficient use of space and resources. Topcon boasts a large share of the global market. Our total station product series offers a diverse lineup to meet customer needs. We also offer a wide-range of high-precision GNSS receivers that can utilize signals from all available satellite constellations to provide accurate positioning information to meet the diverse needs of surveying, civil engineering and construction. Together, this technology enables higher productivity and increased accuracy that reduces waste, and industry professionals are better positioned to complete projects more quickly, while meeting tighter specifications.

Information technology (IT) has become a vital infrastructure that supports humanity. In construction, one of the world’s largest industries, IT and the automation it creates has exciting opportunities for growth. Construction faces issues such as the global increase in demand for infrastructure, increasing costs, and a labor shortage. For more than 20 years Topcon has worked to advance automated construction machinery technology. Construction automation depends upon Topcon high-precision GNSS, total stations, motion sensors and equipment control technology to enable grading and excavation based on pre-configured 3D design data that creates accurate work regardless of the operator’s level of skill. Automation increases productivity, conserves energy, resolves labor shortages, reduces costs, and helps the environment by reducing CO₂ emissions. The use of IT also enables real-time project management and data sharing at every phase of a project. Topcon machine control technology is driving automation throughout the civil engineering market.
Topcon provides three types of solutions for mass data capture: mobile, terrestrial and aerial. Our mobile mapping system is capable of acquiring roadside 3D data and video, and multi-angle, high-precision, high-density 3D data. Our laser scanner provides high-speed acquisition of non-contact, high-precision data applicable for a wide-range of applications. Topcon also offers high-accuracy aerial mapping for inspection and monitoring or survey and mapping applications, data created by Topcon technologies can be integrated for road construction and repairs, maintenance of large-scale structures such as bridges and dams, waterway surveys, the analysis of disaster areas and accident sites, and repairs to and digitalization of archaeological sites and historical buildings.

Our IT agriculture solutions bring efficiency and productivity to virtually every phase of the farming operation, which help alleviate global food supply concerns and improve environmental quality with waste reduction. It is our objective to bring IoT (Internet of Things) solutions into the ag business that will link all the mechanics of farming to provide a workflow automation framework. Often referred to as “farm-to-fork” traceability, cloud-based systems within precision agriculture platforms enable the monitoring and analysis of virtually every part of the farming operation to the dinner table. As this vast amount of data grows, so does the industry’s ability to fine-tune all aspects of the products and distribution. This not only helps ensure that demands are met but also quickly pinpoints areas of safety concern. Topcon IT agriculture solutions span the scope of the entire farming operation to provide the tools necessary to achieve sustainable and profitable agriculture.