



TRIMBLE POWER, PROCESS AND PLANT



 **Trimble**  
POWER, PROCESS & PLANT

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. Our integrated solutions allow customers to collect, manage, and analyze complex information faster and more easily, making them more productive, efficient and profitable.

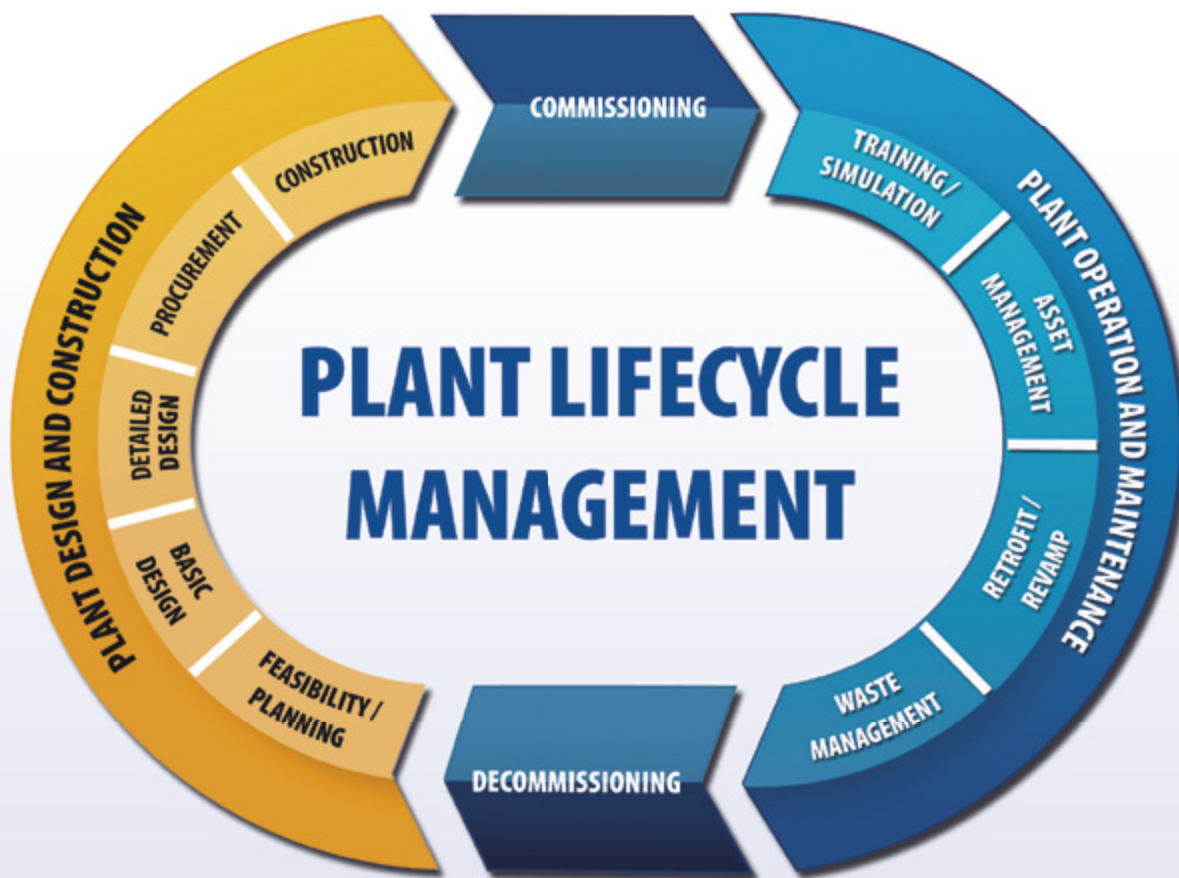
Safety, productivity, and cost reduction are critical for success in industrial plant design, operation, and maintenance. Trimble Power, Process and Plant transforms the work process in the plant life cycle with innovative positioning solutions that deliver increased productivity and contribute to increased safety.

Trimble solutions allow you to capture highly accurate position data quickly and discreetly with the following benefits to you and your business:

- Increase productivity by capturing fast, accurate data with minimal impact to plant operations and project timelines.
- Reduce rework with accurate existing-condition data.
- Make smart data-driven decisions, and make them fast.
- Contribute to improved worker safety by acquiring industrial plant data efficiently and at optimum speed.



*Power, Process and Plant systems harness the breadth of Trimble's offerings, including 3D laser scanning, to provide solutions that are utilized in the oil and gas, power generation, utility management, and manufacturing industries; including chemical, pharmaceutical and metallurgy.*



*Positioning solutions increase efficiency throughout the plant life cycle by providing accurate information about where assets are located. This information increases productivity and reduces costs. All phases of the plant life cycle benefit: from design and construction to plant operation and maintenance. Whether you need to gather information to verify project feasibility data, capture existing conditions for design, or capture information for quality control and as-built; Trimble solutions will optimize your success.*



## PLANT DESIGN AND CONSTRUCTION

Managing a plant through its entire life cycle requires different tools at different times, but at every stage your engineers and managers need to understand the condition of the plant and all its assets.

### FEASIBILITY / PLANNING

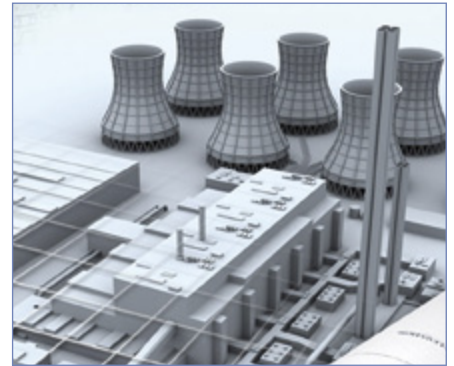
From green field developments to retrofit and revamp projects, capture the data essential for project planning:

Geospatial Systems (Photogrammetry, Mobile Mapping, Lidar)	Surveying Systems	Infrastructure Solutions
Capture large-scale site conditions and topography.	Establish dimensional control for common overall plant coordinates.	Precisely reference positioning to common plant coordinates via the Global Positioning System (GPS).
Perform environmental/geological analysis, construction planning, and basic design.	Precisely locate and establish cadastral boundaries and easements for existing or new utilities.	Maintain consistent plant positioning throughout the plant life cycle, particularly during critical design and construction.
	Capture site conditions and topography for environmental analysis, construction planning and basic design.	

### BASIC DESIGN AND DETAILED DESIGN

Capture and manage the accurate positioning data essential for basic and detailed design. Trimble 3D scanning data provides the foundation for detailed design and lets you compare new designs to existing plant conditions.

Accurate data prevents project delays and costly redesign caused by new designs that do not fit the existing conditions.

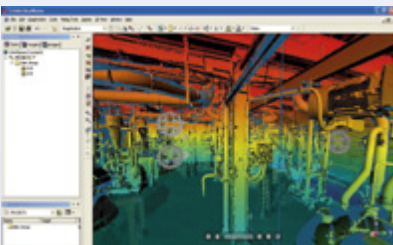


## PLANT OPERATION AND MAINTENANCE

Knowing the location and condition of assets is critical for effectively operating a plant and reducing expenses.

### TRAINING / SIMULATION

Using detailed CAD models and 3D point clouds, training and simulation activities—such as simulating the removal of a large component—can be performed in a virtual world. You can identify and rectify problems without excessive downtime in the plant or undue risk to staff safety.



Visualize real-world 3D plant data to safely simulate, train, or provide additional measurement information.

### ASSET MANAGEMENT

Use positioning and imaging solutions to locate and record asset conditions, such as the status of a pump, as part of a regular maintenance program. For plants with fleets of vehicles and mobile workers, effective management of those assets can increase efficiency and reduce operating costs.



Extend your PLM system into the plant on a rugged Trimble field computer such as the Trimble Tablet: Track and report assets directly to the Trimble Tablet then either process data directly or transfer it to a PC. Integrated positioning and camera capabilities let you collect rich and accurate asset information. Mobilizing PLM data capture increases the accuracy of collected information, saves time, and prevents errors.

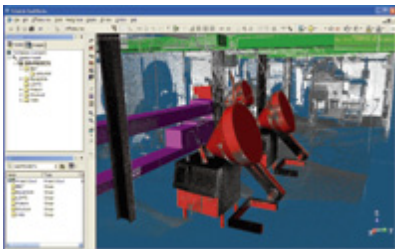


Regularly scan pumps and piping racks to monitor deformation caused by operation at high pressures or temperatures. Compare operational conditions to the design to ensure the plant is operating within specification and not creating a potential failure situation that could risk plant safety and productivity.

# LINKING POSITIONING TO PRODUCTIVITY

## PROCUREMENT

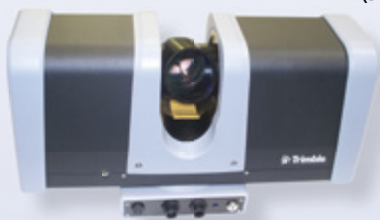
Streamline the procurement and delivery process by scanning or precisely measuring components at fabrication prior to delivery to ensure exact fit. Reduce costly rework and project delays caused by components not fitting with existing conditions. Trimble mapping solutions can accurately position components stored in laydown yards. This process saves time spent locating components when you are ready for installation.



*Compare accurate as-built data with design to streamline construction.*

## RETROFIT / REVAMP

One of the most complex tasks at a plant is accurately recording the space where a new design needs to fit, or determining where the plant needs to be modified to suit a retrofit design. Trimble 3D scanning quickly and safely records plant conditions in readiness for retrofit and revamp projects, while powerful software manages existing condition and new-design data. As a result, discrepancies are identified and managed during the design phase, reducing costly project delays and downtime.



*The Trimble FX 3D Scanner collects high-quality data at incredible speed, plus it is lightweight and portable, making it ideal for industrial applications such as retrofit.*

## CONSTRUCTION

Reduce construction project costs by increasing efficiency with Trimble:

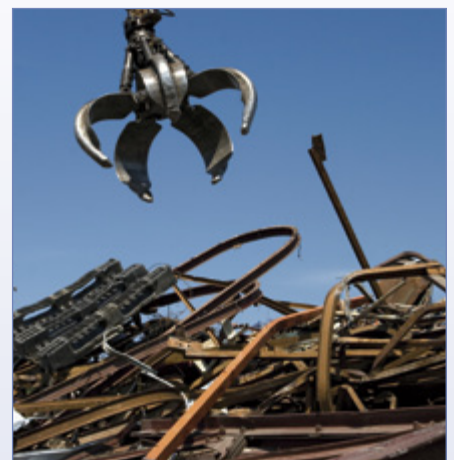
- Trimble Grade Control Systems prepare terrain, streamlining grading and excavation.
- Complete stakeout and layout solutions give general, mechanical, electrical and plumbing contractors more control over their work.
- Assets such as construction machinery can be managed and tracked for optimal productivity.
- As-built positioning and scanning solutions verify and record as-built construction for use in future design.



## WASTE MANAGEMENT

From managing waste incineration to landfill sites, Trimble solutions provide accurate information to maximize capacity and increase operational productivity:

- Accurately locate hazardous waste disposal areas in landfills.
- Accurately measure compaction rates and landfill capacities.
- Establish and monitor landfill slopes.
- Establish and monitor gas-pipe systems (3D model).



## DECOMMISSIONING

Trimble 3D scanning helps to efficiently locate and plan the removal of equipment being decommissioned. Simulations can effectively manage and plan the removal.



## TRIMBLE POSITIONING TECHNOLOGY FOR POWER, PROCESS AND PLANT

Trimble positioning solutions integrate the best of today's and tomorrow's technology to ensure that you are as productive and profitable as possible. Whatever your business' unique needs, Trimble has the proven capability to provide a complete, integrated solution.

### TECHNOLOGY SHOWCASE: TRIMBLE 3D SCANNING

Trimble 3D scanning is a key technological component of Trimble Power, Process and Plant solutions. Instruments such as the Trimble CX 3D Scanner, along with our mobile computing solutions and dedicated software, allow you to rapidly collect rich positioning data for use at every stage of the plant life cycle:

- Accurate existing-condition data provides a solid foundation for project planning and design.
- Asset condition information helps you monitor potential failures and schedule maintenance so the plant remains operational.
- Volume information lets you manage stockpile inventory (e.g., coal, lime, waste) accurately, efficiently, and safely.
- Rich positioning data can be recorded in the form of high-quality 2D and 3D deliverables that add value far beyond your—and your clients'—expectations.



*Capture and manage data efficiently with the Trimble CX 3D Scanner in partnership with Trimble Access™ and Trimble RealWorks® Software.*



“I’m an industrial plant owner/operator and what I need is a plant that’s fully operational at all times with low operating costs. Give me greater efficiency, improved worker safety, and fewer plant shutdowns.”

“In the Engineering, Procurement, and Construction industry I get paid a set amount for each project, so I want to complete each one as quickly as possible to secure maximum profit. And I don’t want to incur time penalties for late completion. For me, minimizing capital expenditure and maximizing project efficiency are critical.”

“As a service provider my job is to provide my clients with the best possible service, which means quality results delivered as efficiently as possible. That’s why I need the best possible positioning solutions for my business.”

## TECHNOLOGY TRANSFER AND PROFESSIONAL SERVICES

Trimble offers a Technology Transfer program plus a variety of other professional services to support your adoption of Trimble technology and plant solutions. These services provide a low-risk entry into plant positioning and allow you to develop a greater understanding of 3D information, work processes, and how positioning technologies can ensure the success of your project and plant operations.

Trimble Plant Services offer data capture, processing and generation of deliverables alongside an in-house team or by contract. We provide a full range of deliverables and file formats depending on your needs: from point clouds to 3D models. Our expert teams are fully equipped with the positioning solutions required for the job, and will deliver the point clouds and additional captured data on schedule.

To learn more, contact us at [www.trimble.com/plant](http://www.trimble.com/plant)

### NORTH AMERICA

#### Trimble Navigation Limited

Power, Process and Plant  
10355 Westmoor Drive  
Westminster, CO 80021  
USA

+1-800-545-5972 Phone  
+1-720-887-6101 Fax

### EUROPE

#### Trimble Germany GmbH

Am Prime Parc 11  
65479 Raunheim  
GERMANY

+49-6142-2100-0 Phone  
+49-6142-2100-550 Fax



[www.trimble.com](http://www.trimble.com)