



Why Position Partners?

We're there when you need us

With more than 30 years' experience in the civil construction industry, Position Partners and its founding businesses have continuously broken new ground in the application of positioning and machine control technology to enable safer, more efficient and more productive construction methodology.

Position Partners' expert team is unrivalled in the industry - our people are passionate about what they do and committed to supporting our customers whenever and wherever they're working.

With more than 250 employees across branches in every state and territory of Australia, no other company can deliver the depth of expertise and boots on the ground support that Position Partners has to offer. We source the latest and most advanced technology from leading suppliers worldwide, ensuring it is fit for the local market and assisting customers with training, service, calibration and support to suit their unique business needs.



Workshop services

Comprehensive product service, maintenance, repairs and advice are provided via our local service centres. We guarantee all our work and can supply calibration certificates to meet QA requirements.



Training

Initial "getting started" training is provided on all systems. Subsequently, a comprehensive range of campus training courses are tailored for beginners to advanced users, either at our offices or on site.



Hire or lease options

The full range of systems, from construction lasers, to GPR and industry-leading RPAS platforms, can be hired or leased to suit any application and provide financial flexibility.







Manage Everyone Working To A Design From A Single Interface

Tokara is the gateway to every machine and survey asset in the field



For all machines & survey assets

Tokara lets you send and receive files from most leading positioning technology brands and machine makes



Project-wide and fleet wide

Whether you're managing multiple assets on a single project, or a fleet across multiple projects



Fast support a phone call away

Remote support for Topcon positioning systems, plus view and connect with other branded systems

Who is Tokara for?

Position Partners has tailored the Tokara service to deliver benefits for a wide range of stakeholders involved in a civil construction project, including:

- **Project Managers:** proactively manage and ensure all machines, sub contractors and survey crews are working to the latest design file
- **Machine operators:** work efficiently with design updates, support and training available in the cab
- **Surveyors:** send design files to machines and supported survey devices remotely to ensure everyone's working to the correct design
- **Foremen:** easy to read map gives you quick access to all machines and survey assets, site-wide
- **Contractors:** keep track of all equipment across multiple projects

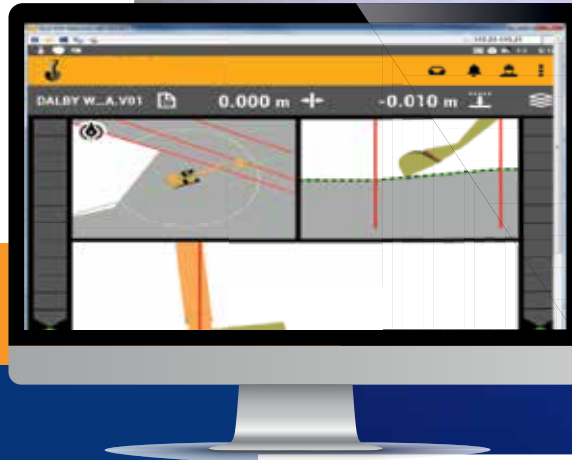
Remote Access & Support

Tokara lets you remotely access the screens of your machine control and survey instruments with a single click

Access Topcon and other factory or aftermarket devices remotely



Send & receive messages to operators, surveyors & foremen



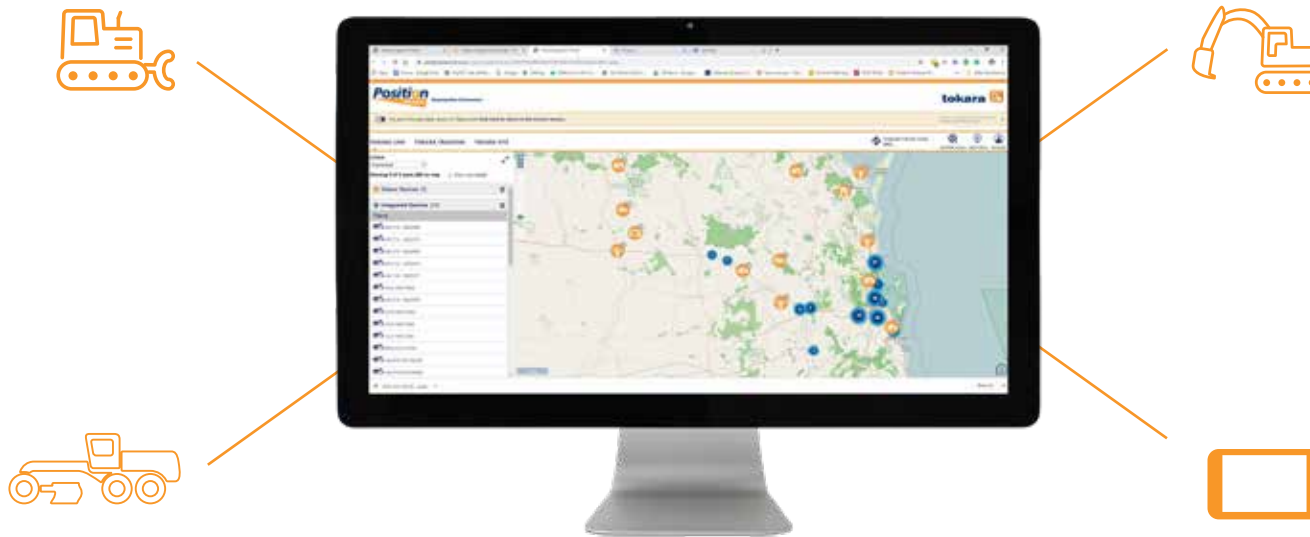
tokara

Tokara plans for civil systems

To ensure that your machine control and survey equipment is always performing at its best, the team at Position Partners is here to support you. Our highly trained specialist technicians are committed to providing the highest quality of service, with Tokara support hubs dedicated to ensuring requests are quickly actioned to maximise your machine uptime.

Our comprehensive plans combine the benefits of Tokara with access to our technical experts, to give contractors and project managers peace of mind that technical assistance, operator training and remote updates are available as needed, reducing the need for on-site visits.

**annual
subscription**



Tokara Office

Manage design files across all devices from a single portal

Tokara Office is designed for surveyors, contractors and managers to proactively control the design file management process across a fleet of machines and rovers.

Whether you're working on one site or managing your fleet across several projects, Tokara helps you to ensure everyone is working to the correct design file.



One to many file transfers, multi-brand

Instantly send design updates to all machines and supported survey rovers, including mixed brands of machines & positioning technology



Colour coded file status for proactive management

View when an operator has downloaded and is working to the latest design, or if it has been sent and not downloaded



File transfer history by machine, device or group

View what files were sent with the date and time sent as well as the date and time downloaded



Version control and file recovery

View design version history and access or recover deleted files for up to 5 days after deletion

Your World On a Map



View and access critical information at a glance

View the machine or device type, online status, connection strength and last known location (updated every 10 minutes) and more



Interactive map to create group or measure

Draw the boundary of a project to create a new geofenced file group. Use the ruler feature to measure distance between CORS GNSS bases and devices



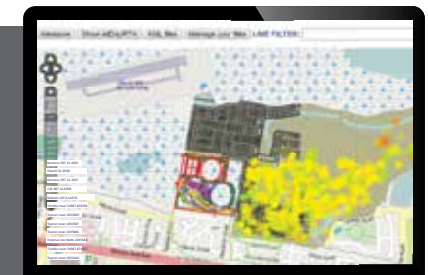
Live filters to get the data you need

Filter your assets by status, file group, serial numbers, name or any other parameters you use to organise your assets and check their status



Visualise your design and identify black spots

Tokara enables you to overlay KML files and drone imagery on the map, giving you a design reference for where assets are working. UHF and cellular signal strength overlays alert you to any black spots on site.



Additional info & reporting



Machine calibration files or build files

View both current and historical machine calibration or build files. Restore previous builds using backed up data.



Current Network RTK session info

View the connection information to CORS Network including login details and the base station connection



Create serialised hardware reports

Report on your trackable machine control and survey components via serial number, name, or custom parameters

Reporting your way

Setup scheduled GNSS usage reports with the option for detailed summary, weekly summary or yearly summary.

Online status alerts

Set up Tokara to email alerts when machines and devices are next online.



Grade Lasers

Available with either single grade (1S) or dual grade (2S) capability, the RL-200 Series from Topcon offers reliable, repeatable grade measurement.

With exceptional slope range and a large, easy to use screen and user interface, Topcon's RL-200 series combines advanced technology with simple, robust design. The 2S model also comes with a full-function remote, for complete control of the laser from up to 200m away.



Pipe Lasers

Topcon's TP-L6 series of alignment lasers offer a combination of features and technology that are proven to meet the demands of contractors more than any other alignment lasers on the market.



	Elevation Only		Elevation & Slope		Dual Elevation	
	auto	indicate	auto	indicate	auto	indicate
Dozer	•	•	•	•	•	•
Grader	•	•	•	•	•	•
Compactor	•	•	•	•	•	•
Scraper		•		•		•
Skid Steer	•	•	•	•	•	•
Tow Scraper	•	•	•	•	•	•
Tamper	•		•			

Applications

- Subdivisions
- Wetlands
- Bulk earthworks
- Carparks
- Industrial subdivision
- Sports fields
- Rail
- Landfill
- Landscaping
- Golf courses
- Batters
- Sewer & drainage
- Gas lines
- Basements
- Footings & foundations
- Dredging



2D Machine Control

iDig

iDig is the world's best portable 2D Machine Guidance System for excavators. With wireless, solar powered sensors and a "Clip in - Clip Out" touchscreen the iDig can quickly be moved from machine to machine, offering accurate guidance for multiple attachments on a wide range of jobs, all with one system.

- 2D depth, height and reach with Single and Dual Grade Guidance
- Depth and Alignment Guidance for Auger Drill attachments
- Intuitive with built-in help menu
- Tilting Hitch or Bucket and Blade upgrades available



System 5

Skilled machine operators are becoming scarce. Jobsite pressure is always there. The need for production is constantly rising.

Topcon machine control systems bring that bit extra to ensure deadlines are being hit and earthmoving results are accurate to the millimetre. Move between multiple 2D machines.



GX-55

The GX-55 is designed to handle rugged field conditions as well as harness the powerful processing power needed to instantly display real-time position and project design information.

- Integrated light bars for quick visual reference to grade
- Lightweight, compact design
- Large button and touch screen built for operator hands, not office hands
- Responsive, easy-to-use Windows operating system
- Upgradable to 3D applications
- Move between multiple machine types
- 2D and 3D compatibility



Additional Elevation Control

Take your 2D machine control to the next level with Topcon elevation control sensors for tight 2D tolerance and slope work.

- Sonic trackers
- Laser receivers
- Tracker jacks





Mass Haul & Weighing

Loadex 100

on-board weighing solutions for excavators

This easy-to-use system gives operators accurate bucket weight information at their fingertips, to increase productivity and reduce machine wear.

With the ability to store data for accurate record keeping, traceability and stock management, Loadex 100 is a flexible solution that can be customised to suit a wide range of earthmoving applications, attachments and accommodate a variety of active jobs simultaneously.



Loadmaster 100

on-board weighing solutions for loaders

Loadmaster α100 has been designed to operate within the fastest loading environments and toughest of conditions compensating for uneven, sloped ground and restricted loading areas reducing cycle times and maximising tons per hour performance.

Loading correctly first time eradicates return trips to the stockpile reducing vehicle movement, fuel usage and machine and tyre wear. Plus, you can opt for a Trade version that enables you to transact from your weight figures.



Weighlog 10

on-board weighing solutions for compact loaders

Loading correctly first time maximises productivity, reduces vehicle movement, fuel usage and machine and tyre wear.

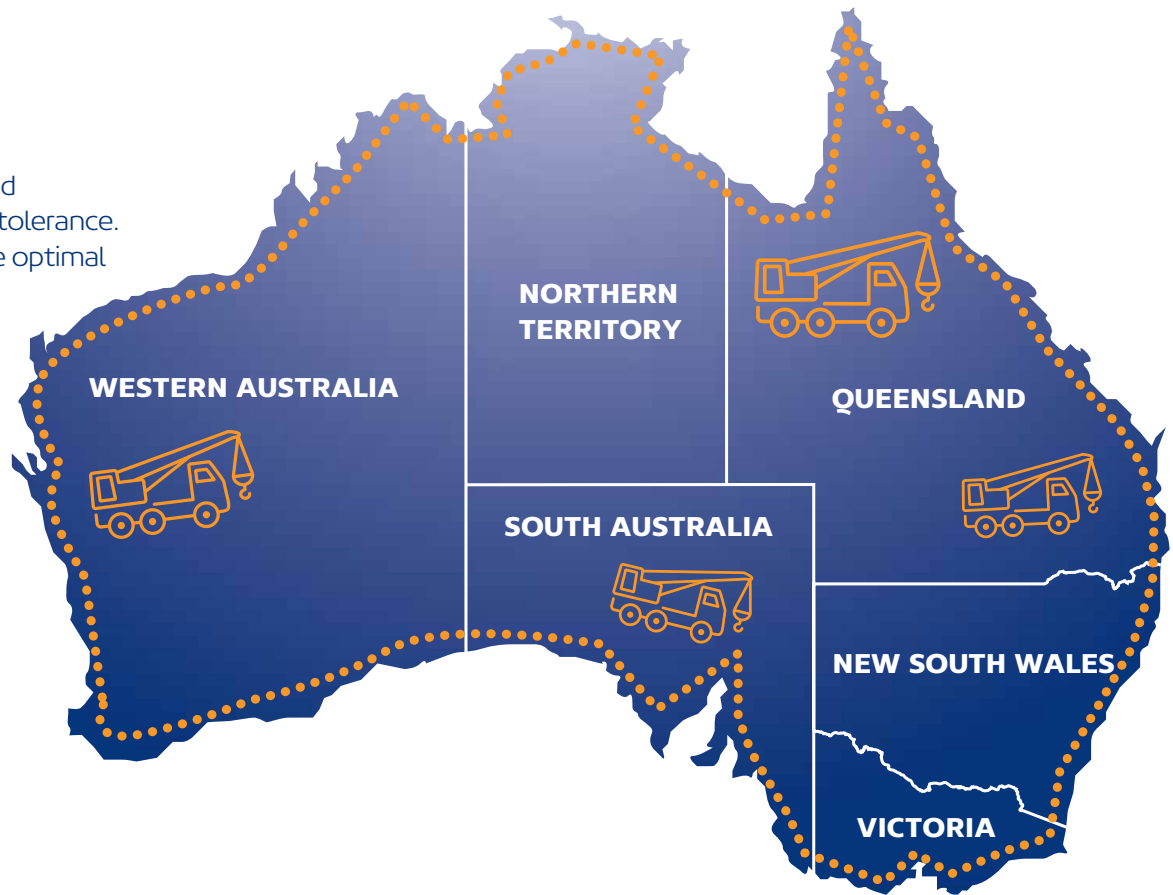
Suitable for use with up to 10 different attachments e.g. buckets or forks, the system can be retrofitted onto compact wheeled loaders, telescopic handlers, forklifts and skidsteer type loaders.



Mass Haul & Weighing

Position Partners has a fleet of trucks available to calibrate scales and weighbridges, to ensure systems are working accurately and within tolerance. It is recommended to calibrate your scales every 6 months to ensure optimal performance.

- Loader scales
- Excavator scales
- Forklift scales
- Weighbridges
- Belt scales



Scale calibration for all makes of machine and all brands of on-board scales



Available Australia-wide with trucks covering East and West Coasts



Mine-spec machines and weighbridge calibrations available



GNSS: The heart and soul of machine control

Common Hardware | Swap Components



Applications

- Subdivisions
- Wetlands
- Bulk earthworks
- Carparks
- Industrial subdivision
- Sports fields
- Freeways
- Airports
- Rail
- Landfill
- Landscaping
- Golf courses
- Batters
- Sewer & drainage
- Gas lines
- Basements
- Footings & foundations
- Dredging
- Dams

Have it your way

Single, Twin or Dual GPS options

Only Topcon gives you the flexibility to power up your machine with the right GNSS setup to suit the work you're doing.

Single = one GNSS antenna



Great for a wide range of applications, however with only one 3D position it does have limitations:

- Unable to work in reverse
- Unsuitable to steep slopes as it can give an elevation error
- Struggles when machine is moving quickly



Twin = two GNSS antennas on the same mast, using a diamond bracket



Topcon is the only manufacturer to offer this solution. Two antennas give you two 3D positions and that has a number of advantages:

- Always know your heading even when working at speed or in reverse
- Ideal for grading as operator can roll the blade accurately and without a slope sensor
- More accurate elevation than single or dual GNSS setups, especially when working on changing mainfall grades and steep slopes
- Easily switch between other positioning systems such as lasers, sonic trackers, or LPS total station solutions



Dual = two GNSS antennas mounted on two separate masts



Dual setups are most common on excavators as they enable the machine control system to always track the position of the boom.

On graders, dual GNSS eliminates the need for rotation, slope and mainfall sensors.

- Always knows the position of the cutting edge and blade direction
- Good for working on steep slopes
- Unlike a twin setup, you cannot switch to different positioning technology e.g. laser or total station system, without first installing rotation, slope and mainfall sensors



GNSS Survey Instruments and Correction Services

GNSS Survey Instruments and Correction Services

Position Partners offers multiple options for GNSS corrections on site, from solar powered site bases and repeaters, to Network RTK subscriptions and our MiRTK alternative to UHF service.

Whether to provide your GNSS corrections for machines, set out plans and check as-builts with a survey rover or supervisor vehicle, we have the right solution for your needs.



HiPer HR

Advanced GNSS Receiver

Part of our Elite Survey suite, it's highly configurable and designed to grow with you. You can track every satellite signal above, and handle any job that comes your way.



- Next generation Fence Antenna® technology for superior reception
- Unique 9-axis TILT™ compensation
- Internal Wi-Fi and multi-spectrum Bluetooth®
- LongLink™ interference-free communication, up to 300m range

HiPer VR

Versatile GNSS Receiver

The HiPer VR is small and light, but don't let its small size fool you. It's not only packed with the most advanced GNSS technology, it's also built with a rugged housing – not weak plastic – to take the punishment of the job site.



- Universal Tracking Channels™ for all satellites, signals and constellations
- Field-tested and ready IP67 design
- Compact form factor ideal for Millimeter GPS and Hybrid Positioning™
- Revolutionary 9-axis IMU and ultra-compact 3-axis eCompass

HiPer SR

Site Receiver

The most compact fully-integrated RTK receiver on the market.



This versatile, affordable cable-free system is just right for small or contained job sites.

- Integrated cellular modem option
- Dual SIM cellular card support
- LongLink™ interference-free communication, up to 300m range
- Ideal for Hybrid Positioning solution with robotic total stations
- Perfect as an AllDayRTK network rover



AllDayRTK – Enabling Geo-Precision

AllDayRTK is a Continuously Operating Reference Station (CORS) network that delivers accurate, reliable RTK GNSS positioning. Eliminating the need to setup and maintain a temporary base station, AllDayRTK is a subscription service that gives you increased flexibility and ultimate reliability.

AllDayRTK has built a reputation for better reliability, better performance and the best quality amongst CORS service providers in Australia. To maintain our leadership position as the most valued CORS service, AllDayRTK subscription prices have not been increased since 2014!

Our tailored AllDayRTK products are designed for maximum flexibility and best value to meet a variety of our customers' needs.

AllDayRTK Products

- AllDayRTK – purpose built positioning infrastructure in high-activity areas
- PLUS – premium national product for multi-GNSS, RINEX and web tools
- SITE – flexibility to choose a suitable package at specific site locations
- Focus – managed services for major projects
- RINEX – customers who only require post-mission RINEX products



MiRTK Internet Enabled Correction Service

If you've experienced frustrations from working with UHF radios and are concerned about the rising costs, increasing restrictions and costly penalties, MiRTK is an alternative that gives you dependable service that's simple to use and works with all makes of GNSS equipment including Trimble, Leica, Topcon, Sokkia, Hemisphere and more.



MiRTK offers an alternative to UHF radios. It delivers the same RTK accuracy correction data from your GNSS base station with some key benefits:

- Works with all brands of GNSS
- Simple Hardware as a Service solution – no complex licensing
- Single protocol for multiple devices on site – unlimited connection to machine control, GNSS rovers and other devices requiring RTK positioning



3D-MC Software

The Engine Behind Machine Control

This easy-to-use system gives operators accurate bucket weight information at their fingertips, to increase productivity and reduce machine wear.

Loved by operators for its easy to use, full colour interface, Topcon 3D-MC software is the engine behind machine control solutions that enables seamless transfer of data from surveyors, project managers and operators.

Why Topcon 3D-MC:

- Multi-view
- Steer to polylines
- Offset grades
- Fully customisable
- Visual and audio alerts
- Work normal to surface or perpendicular to surface
- Avoidance areas
- Move between machines
- 2D and 3D
- Built-in light bars





GX-55
7" display

GX-75
10" display

	Rover box		Antenna Type		GPS system		MC ²		MC ^{MAX}	
	auto	indicate	auto	indicate	auto	indicate	auto	indicate	auto	indicate
Dozer	•	•	•	•	•	•	•	•	•	•
Grader	•	•	•	•	•	•	•	•		
Excavator				•						
Compactor	•	•	•	•	•	•	•	•		
Scraper		•		•						
Wheel Loader				•						
Skid Steer	•	•	•	•	•	•	•	•		
Surface Miner	•	•	•	•						
Trencher	•	•	•	•						
Crane / Cable Excavator				•						
Drill				•						
Tow Scraper		•		•						
Light Truck		•								



Final Trim The Topcon Way: a choice of technology

mmGPS vs LPS - explanation & benefits

mmGPS: This patented technology improves grading accuracy up to 300% over existing 3D-GPS machine systems. Unlike any other laser technology, the PZL-1 transmitter sends out a wall of light 33' tall and up to 2000' in diameter. Simply add the PZS-MC machine control sensor or PZS-1 rover sensor to your existing GPS+ system, and watch your GPS vertical accuracy shrink down to numbers you never imagined before. Not just a laser, 10m fan beam - far higher range capability than a standard grade or construction laser.



LPS: Topcon's Local Positioning System (LPS) is ideal for high precision applications where the machine does not have open sky visibility and is unable to receive consistent GPS satellite signals. Working in built up areas or under heavy tree coverage can limit the performance of GPS-based machine control solutions. Topcon's LPS system is perfect for these conditions, as it uses a Topcon robotic total station to give positioning corrections to the machine.



Multi-Technology Compatible

mmGPS	LPS
Open Sky	Any environment inc. underground
Requires GPS + base/network	Standalone
Larger final trim working zone	Restricted by total station range
Can use with multiple machines & rovers simultaneously	Independent of other machines
Up to 40m elevation change in job, up to 1200m range	Unlimited elevation, but limited to 300m working range
Rover compatible	Rover compatible
Self levelling	



Machines	mmGPS	LPS
Excavator		* (with gyro) run for minutes without line of sight - holds position until connection resumed
Grader	•	•
Paver	•	•
Dozer	•	•
Milling machine	•	•
Compactor	•	•
Skid steer	•	•
Tow scraper	•	•
Trimmer	•	•
Kerb & gutter	•	

Applications

- Subdivisions
- Carparks
- Industrial subdivision
- Sports fields
- Freeways
- Airports
- Rail
- Landscaping
- Golf courses
- Basements
- Footings & foundations

Paving

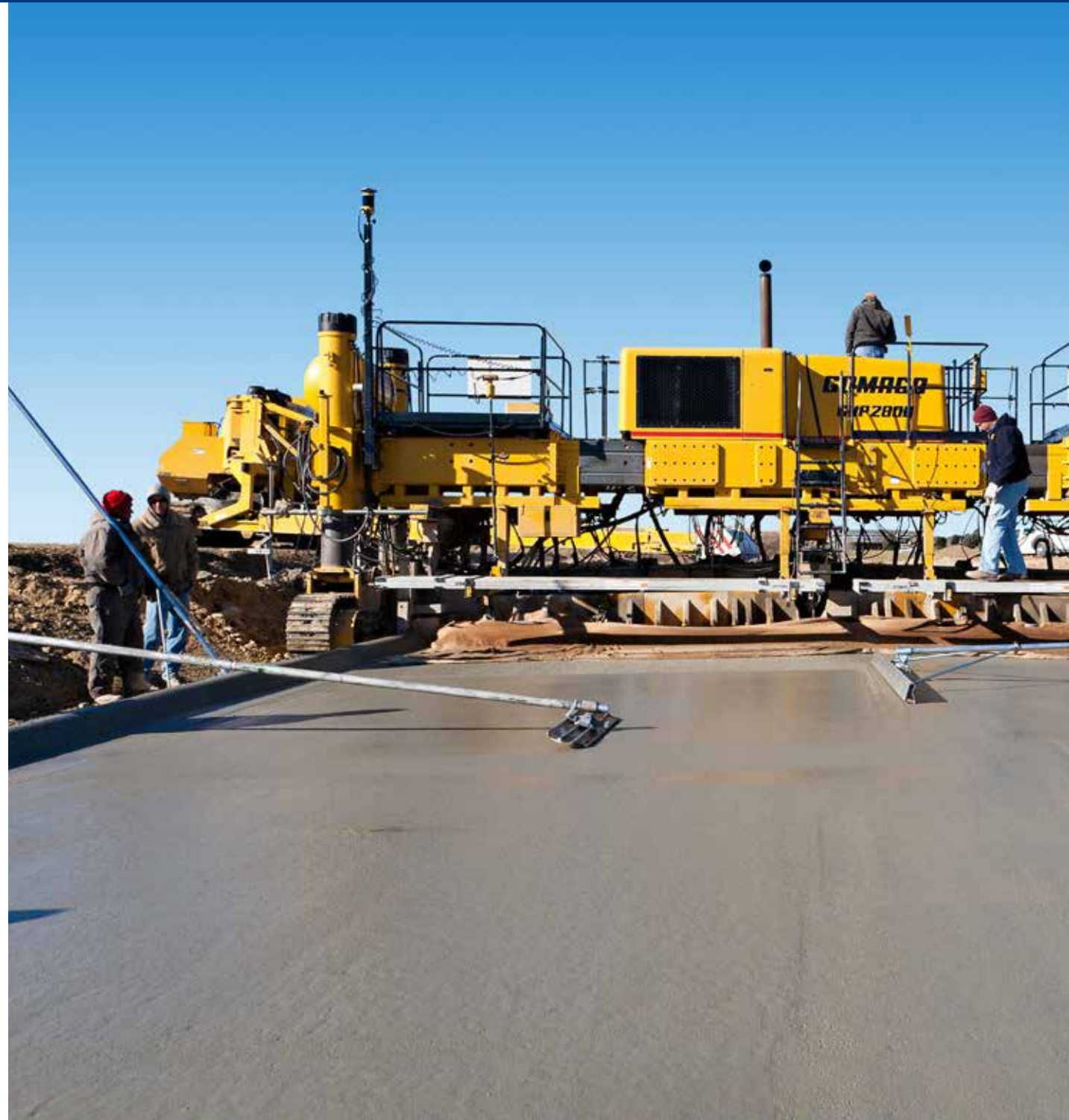
Relative or Absolute?

- Is there a pre-defined design?
- Tied to project control and elevation?
- Incentive on elevation tolerance?
- Incentive for meeting the design criteria?

Yes? Then mmGPS or LPS is the answer

- Relative to the existing surface?
- Incentive based on smoothness?
- Incentive based on material quantities?
- Looking to correct cross slopes?

Yes? Then 2D or SmoothRide is the answer



3D Paving – mmGPS or LPS

Free your paving from the confines of stringlines and other linear references and move production to the fast lane.

Advantages:

- High accuracy grade reference covers your entire project – eliminating stringline
- mm-GPS provides precise vertical data to multiple machines and surveyors
- Handover with transmitters or total stations for a larger workable area
- Pave complex transitions, even through horizontal and vertical curves
- Share components with other Topcon 2D and 3D machine control systems

The most advanced 3D paving system on the market.



2D Paving/Smoothride

Mapping, processing, designing, controlling.

Advantages:

- Variable control to suit real world conditions
- Collecting data safely
- Differential compaction calculations
- Saves on materials
- 100% coverage of work area

Intelligent Compaction

- 100% coverage of work area - know you've covered the whole road
- Identify weak zones in road - save rework down the track
- Add accelerometer & temperature sensor to common Topcon components
- Reporting - compaction, temperature, pass count etc





Slew Limiting

Sensor Slew and 3D-MC

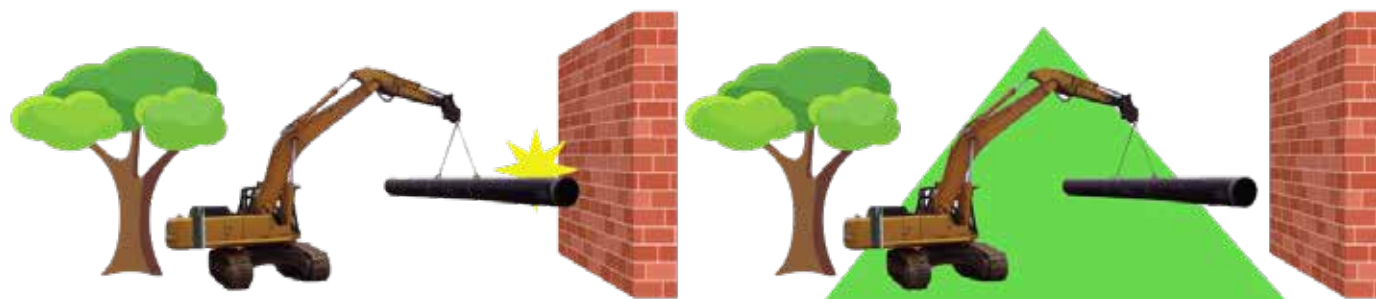
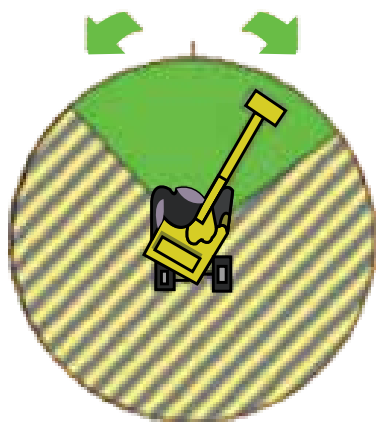
The SensorSlew motion control system is a simple, cost effective slew limiting solution designed to guarantee safety and prevent machine damage when operating in confined spaces.

Position Partners has integrated the SensorSlew system with Topcon 3D machine control. SensorSlew allows the machine operator to quickly and easily set left and right slew limits from the operator station, and then restricts the machine to working within the permitted slew sector.

Topcon 3D machine control calculates the angular limits from the bucket to a selected line and sends these angles to SensorSlew. This provides a continuously updated set of limits to allow the excavator to work in the designated working area and not enter an exclusion zone.

The SlewSolution system at work

The SlewSolution system allows the machine operator to set a 'safe zone' within which the machine will operate. If the machine operator directs the machine to move outside the 'safe zone' the hydraulic solenoid valve is released to cut off the relevant slew hydraulic service, preventing the machine from moving outside the 'safe zone'.



Proximity Detection Systems

Fully customisable for indoor and outdoor applications

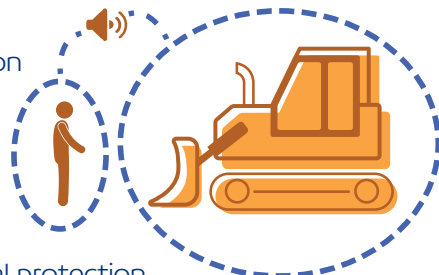
The Proximity Detection Systems supported by Position Partners can increase safety on site by alerting machine operators, drivers of light vehicles and individuals on foot to their proximity to moving plant on site via small devices fitted to the machine or worn on clothing. Collision awareness technology alerts operators to possible collisions.

The system uses a range of technologies to detect and warn the operator of a potential collision with another vehicle or detection of a worker. Workers wearing a Personal Proximity Device (PPD) are also warned if they get too close to a vehicle fitted with the system.

The system is configurable to meet the customers specific road rules and logs all events and alarms to memory which can be downloaded locally to a USB memory stick or remotely via a modem.

Applications include:

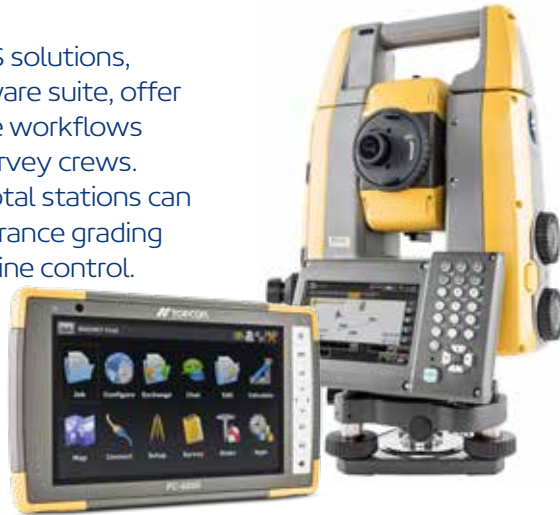
- Vehicle to person protection
- Person to vehicle protection
- Vehicle to vehicle protection
- Vehicle/person to object protection
- Close proximity only detection
- Person tracking
- Adjustable alarm zones
- Points of Interest (POI)
- Event logging
- Optional live tracking and personal protection



Survey & Geospatial Solutions

Traditional Survey

Topcon total stations and GNSS solutions, powered by the MAGNET software suite, offer comprehensive and easy to use workflows that connect field and office survey crews. Topcon's GT series of robotic total stations can also be used to deliver fine tolerance grading measurements using LPS machine control.



Monitoring

Senceive wireless monitoring solutions offer proven reliability and accuracy for deformation monitoring of civil infrastructure projects. Ideal for large scale sites including rail, tunnels, bridges and more, Senceive solutions are flexible, customisable and fast to deploy.



Remotely Piloted Aircraft Systems (RPAS)

Position Partners has an expert RPAS team to assist with training and technical support of your survey drone technology. With complete packages that cover hardware, photogrammetry software and visualisation tools, we ensure you have a robust solution backed by superior customer service and dedicated support.



3D Laser Scanning

From Topcon's hybrid GTL-1000 that enables fast 3D scans with your total station, to high precision terrestrial laser scanning solutions by Z+F, Position Partners can support your mass data collection needs with expert advice and support.



Tiny Surveyor

Tiny Surveyor is a robotic pre-marker tool that will save you time, increase safety and enable you to mark out road lines automatically. With the ability to interface to any GNSS or total station for precise height measurements, the Tiny Surveyor is a versatile and reliable tool that works for eight hours on a single charge.

Upload your design file via USB to the app and watch as the Tiny Surveyor completes the marking work for you. The Samsung tablet enables you to stay in control at all times and its high weatherproof rating ensures the Tiny Surveyor can work in even the toughest environments.

- Up to 10 times faster than marking out on foot
- Increase safety by following the robot from a car
- Reliable, repeatable 2-3cm accuracy
- Works as hard as you do with 8 hour battery
- Versatile to accommodate different spray can sizes
- Compact, portable design makes for easy transportation
- Use with your existing GNSS and optical survey equipment
- Works with a variety of standard file formats



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Shaping New Dimensions