GLOBAL SURVEY
SURVEY & CONSTRUCTION TECHNOLOGY

Leica Geosystems
Machine Control Solutions

PART OF HEXAGON

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www.globalsurvey.co.nz

- when it has to be **right**

Leica Geosystems

About Global Survey


Leica Geosystems
Service Center Authorization
Global Survey Ltd.
Auckland, New Zealand

Global Survey provides significant value to New Zealand businesses through expert technical advice, experience and industry knowledge. For more than three decades, as Leica agents, Global Survey has matched innovative leading-edge solutions to customer needs.

We pride ourselves on innovation and remaining at the forefront of technology for the New Zealand surveying, machine control, and construction markets. We are uniquely positioned to provide a complete site solution.

Global Survey supply construction and survey companies with the most comprehensive range of hardware, software and services for a wide range of applications including major infrastructure projects, earthworks, building, irrigation and drainage, BIM, Monitoring, Forensics, GIS etc.

Our machine control solutions are easy-to-use and have been developed to minimise construction costs. They lead the industry by delivering higher productivity, ROI, quality and safety to the entire project.

Recognised as being one of Leica Geosystem's leading dealers internationally and having won multiple awards, Global Survey matches innovative leading hardware, software and services to customer needs.

Customer Support

We stand by our products and provide the best after-market support in the industry. We've built up a loyal customer base by delivering exceptional support for our customers.

Our team of experienced industry professionals are able to provide quality advice, support and training on our entire range of products and solutions.

Service Centre

Over the years our service centre has evolved to be one of our greatest strengths with experienced Leica factory trained technicians, first-class infrastructure, specialist equipment and investment in a full range of spare parts.

With facilities in both Auckland and Christchurch, we operate the largest and most sophisticated survey & construction instrument service centre in New Zealand offering servicing, calibration and repair.

The Global Survey Service Centre is Leica accredited and regularly audited to ensure we service, calibrate and repair instruments to the same standard as the Leica factory in Switzerland.

Leica Geosystems
Machine Control Solutions

Contents

- when it has to be **right**

iCONstruct

Seamless integration with one user interface

Invest in the solution you need today and have the flexibility to expand your product portfolio based on your future needs tomorrow.

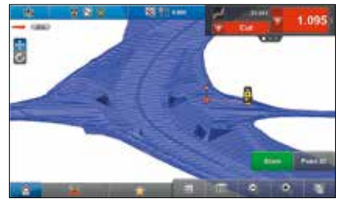
Leica iCON site field software

Leica iCON gps 60
Versatile smart antenna for multi-purpose positioning tasks.

Leica iCON robot 60
High-end robotic total station with superior technology and iCON field onboard.

Core central interface to all iCONstruct sensors and devices with unmatched simplicity and no compromise on functionality.

Leica iCON Indicate
One solution for earthworks and grade checking.



Leica iCON CC80
Rugged lightweight, powerful field controller.

Leica iCON prep
Simple tool to verify field data in the office by using the same user interface for field and office.

Leica iCON robot 50
One-person operation, saving time and increasing productivity when carrying out layout tasks and as-built checks.

Leica Infinity office software
Data preparation, verification and reporting of simple to complex projects.

Leica iCON site
Profit from your investment

Advanced user interface customised for construction personnel
iCON site is designed to increase your productivity and enable you to adapt to any given scenario on site. If you work with machines on site, use iCON site to check your progress to determine if you are working to the correct depth, profile, grade or surface, without having to wait for an engineer or surveyor to carry out these tasks. iCON site is developed to seamlessly integrate with any of the iCONstruct sensors and the iCONtrol machine solutions.

Using the same, interchangeable user interface means:
- You only need to learn its functionality once resulting in less training, increased motivation and significantly reducing your investment
- The ability to exchange hardware and data between on-machine and off-machine use, projects and site personnel maximises your flexibility and reduces possible downtime

Exceptional application functionality
The exceptional features and unmatched graphical support within iCON site allow you to carry out specific tasks on site in an easier, straightforward way. Use iCON site for checking dimensions, volumes, positions and the status of key site elements. iCON site allows the user to complete all site related tasks from one measuring device ensuring an effortless process from start to finish.

- Simply measure, stake-out or check site elements without waiting for an engineer or surveyor to do the work for you
- Benefit from quick volumes and checks by using iCON site for Site Navigation on your vehicle
- If using 2D machine control, iCON site allows the operator to mark out the required starting point or boundary of the profile to be used on the excavator or bulldozer

Leica iCON site for foremen
Take the guess work out of your project

With the Leica iCON site field solution you can increase efficiency and quality of work on site

The Leica iCONstruct field Supervisor and Foreman kit from Leica Geosystems gives you instant real-time access to project statistics in the field, allowing you to make informed decisions quicker than ever before. Instantly increase site productivity by checking the efficiency of your machines and site personnel with an easy-to-use in-cab display, make checks on whether your project is on time, on budget and on specification. With iCON site software you can carry out accurate as-built checks, grade checking and volume calculation.

- Real-time project information and statistics in the field
- Update site personnel with new design files and work orders
- Minimise errors and avoid costly rework
- Increase machine utilisation and save fuel costs by doing the job right the first time
- Calculate the exact volume of excavated dirt or fill materials needed to optimise material savings
- Conduct simple site measurements and calibrations without waiting for a surveyor to do the work – reducing machine downtime and increasing productivity
- Navigate to points-of-interest, such as control points or site boundaries

- How often does work on-site have to be stopped while waiting for a surveyor?
- How often do you need to know if the layer has been built to specification? Is the thickness of the layer correct?
- How often do you guess how much dirt has been moved or material is left?

Leica iCON CC80
Perfect real-time communication on site

Leica iCON CC80 versatile tablet PC is designed to transport a user's office directly to the field

The rugged, lightweight devices have a clear and easy-to-use 7" touchscreen designed to facilitate with data collection tasks on site, while at the same time communicating with the central office, real-time data transfer is made easy.

- Leica iCON CC80 controller is the world's thinnest and lightest fully-rugged 7" Windows® tablet and features a battery life of up to 16 hours
- Large 7" sunlight readable touchscreen display for convenient operation
- Windows 7/Windows 8.1 multi-lingual operating system
- Various communication possibilities (Bluetooth®, WLAN, 3G/4G modem, LAN, USB, RS232) for the use with different sensors for different applications

Leica iCON gps 60
Smart positioning on any construction site

Leica iCON gps 60 is a versatile SmartAntenna for all construction positioning tasks

- Superior GNSS technology for maximum accuracy and reliability, featuring Leica SmartTrack+ and SmartCheck+
- SmartLink Fill increases productivity by maintaining high accuracy positions even after RTK signal loss for up to 10 minutes
- Future-proof satellite tracking, works with all existing and future satellite systems
- Multi-purpose GPS solution can be used as construction site GNSS Base, Rover or NetRover, in supervisor vehicle on site and entry level machine control mounted inside a machine
- Unique communication flexibility, featuring integrated radio, modem and Bluetooth®
- 3G/4G/LTE modem provides excellent network performance
- Integrated NTRIP Server and Caster for internet based Reference Station, means no radio frequency interference or radio range limitations. GNSS measurements are made even easier!
- No controller required for base station set up means you need less hardware

Leica iCON robot 50 / robot 60
Robotic total stations for one-person operation

Save time and increase your productivity by doing layout work and as-built checks yourself. With the Leica iCON robot 50/robot 60 you don't need an operator at the instrument. The robotic total stations can be operated from the field controller at the prism pole, at the point you need positioning.

Leica iCON robot 50 / robot 60 are designed specifically for ease-of-use within the construction industry, simply level the instrument and go! With the iCONstruct software, you can use it for a wide range of measuring and positioning tasks on site.

- Most accurate reflectorless measurements in its class
- One-button keyboard for simple operation
- PowerSearch (patented search technology)
- Superior tracking performance
- Flexible data communication: WLAN (150m range) or long-range Bluetooth® (350m), simply upgrade your communication by swaping the instrument handle
- Electronic Guide Light (EGL) assisting the operator with the prism targeting
- Easy hand-over control from rover to machine control and vice versa
- Wide range of applications with the custom-built iCONstruct software
- Operates seamlessly with all Leica iCON sensors

Leica iCON robot 60 - built with a focus on construction workers

- Minimised training and support by using the same clear menus and graphics found on all iCON devices
- Designed for optimised workflows, allowing foremen and site supervisors to complete routines faster and simplifying a variety of tasks
- Fully supports the Leica ConX option which connects BIM operators with their team in the field
- Setup Pilot – world's first fully automatic setup measurement method
- Cube Search – boosts prism search to a maximum
- Target Snap – ignores other prisms, just locks to yours
- ATACK support for PaveSmart 3D

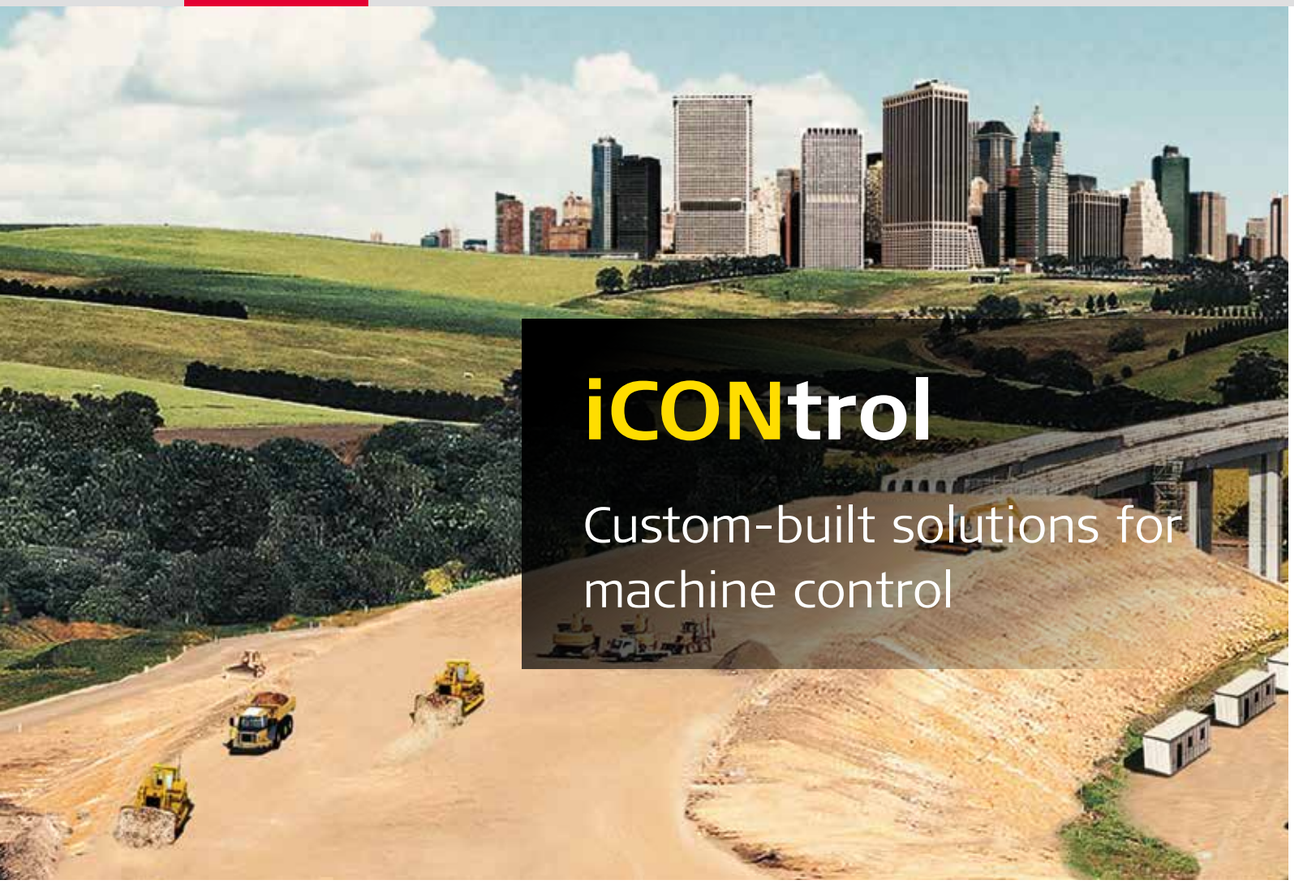
Leica Infinity Survey Software
The bridge between field and office

Leica Infinity is the user-friendly geospatial office software for the measurement professional. Whether it's measuring new survey projects or preparing data for construction layout jobs, Infinity supports your workflow.

Different data come together on a field project – BIM, CAD, GIS and more. Infinity can extract and export these data types seamlessly. Using the integrated data exchange services Leica Exchange and Leica ConX makes moving data that much more efficient.

Infinity supports your workflows:

- Import, visualise, and manage data easily, all in the 3D viewer
- Prepare survey or infrastructure data including roads, surfaces and control points for field crews
- Generate and save reports in your project for complete traceability
- Process Terrestrial TPS & Level data and Triple frequency multi constellation GNSS data
- Full 3D, 2D, 1D Network Adjustments to produce reliable control coordinates
- Use and manage images from the field including measuring points from images
- Work with scan point data including full 3D meshing tools
- Field to Finish for efficient CAD deliverables
- SmartFix integration for downloading GNSS reference data
- Complete spatial awareness with HxIP imagery and default base maps
- Use the Leica Exchange, Leica ConX data services for efficient data transfer



Leica Geosystems iCONtrol

Take your workflow and performance to the next level with the latest machine control solutions.

iCONtrol makes it even easier for you to leverage the entire range of intelligent, tailor-made iCON products. iCONtrol solutions communicate seamlessly with the iCONstruct sensors and iCON office to provide you with a smooth workflow.

Expand your possibilities with iCONnect services for remote support, easy data transfer and fleet management services. Whatever you need, Leica iCON has the solution for enhancing your workflow.

iCONtrol PowerSnap

Wireless cradle – all set in one snap!

Leica iCON excavate iXE2
2D Excavating solution
Full 2D functionality presented on multicolour panel. Simple and intuitive user interface which provides ease-of-use.

PowerSnap concept
Unique patented Snap-on & Snap-off capability. Contact free. Easy upgrade 2D -> 3D. Intelligent storage of machine data.

Leica iCON grade iGx2
2D Grading solution
Easy monitoring of the blade position. Main function keys for easy operation.

Leica iCON excavate iXE3
3D Excavating solution
Full visual guidance of the bucket – see the job as you want. Menu keys give the operator an easy overview of functions.

Leica iCON grade iGx3 / iGx4
3D Grading solution
Fully customisable 3D views of your machine and job site. Auto/manual information is presented on the screen.

Leica iCP41 / iCP42
3D solution
Combines full 2D with full 3D in ONE panel. Toggle between 2D and 3D by a simple touch of a button. Presented on a 7" large graphic colour touchscreen.

Excavator Systems

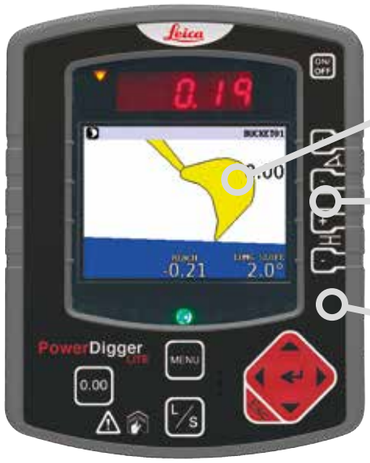
1D, 2D and 3D excavating systems

iCON excavate

iXE1, 1D excavating system

With the single slope system from Leica Geosystems you do not need to use a laser. The cutting depth is directly presented on the control box display in the cabin. The 1D excavator system uses three inclinometer sensors mounted on the boom, stick and bucket. The sensor on the stick also has a built-in laser receiver.

The system is reset by means of a laser plane or a physically defined reference height, e.g. a grade bar or curb stone height. The desired depth and slope are entered into the control box. With this system, you only work with a one-direction slope. The arrows on the display will indicate whether you are too low, too high or "on-grade". This information is also given by means of an audible signal, while the LED screen also displays the level in metric units or US feet.



Easy-to-use graphical display

Short learning curve thanks to smart menus

Robust and reliable construction

1D excavating system functions

DEPTH
Commonly used for bases, foundations, etc.

SLOPE
Set the desired slope for the embankment.

PIPELAYING
Set the desired depth and slope of the pipe trenches.

UNDERWATER WORK
The bucket motion is shown on the graphical display.

GRADING WORK
Set the right depth and the desired tilt in one direction.

LASER REFERENCE
Offers the possibility of using rotating laser as a reference.

GRADIENT
In the longitudinal direction.

HEIGHT ALERT
An audible signal warns the operator if the defined limit is exceeded. Useful around bridges and overhead lines.

iCON excavate
iXE2, 2D excavating system

Our dual-slope system combines the depth, pitch and roll – giving you a complete picture of the excavation works. iXE2 is suitable for small road excavation jobs, drainage work or parking lot excavations.

An additional rotation sensor on the counterweight upgrades the system to a dual-slope capability. The 2D function uses a compass to fix the slope direction. This means that you can move the machine without the system losing the direction. The dual-slope system contains two sensors that record the pitch and roll and compensate for the tilt of the machine. The machine can thus stand at an inclined position and still carry out levelling work around the entire machine.

Easy-to-use graphical display

Short learning curve thanks to smart menus

The PowerSnap concept makes it easy to remove the machine control panel from the cab

Arrow display indicating the bucket height

2D excavating system functions

DEPTH
Commonly used for basements, foundations, etc.

SLOPE
Set the desired slope for the embankment.

PIPELAYING
Set the desired depth and slope of the pipe trenches.

GRADING WORK
Set the right depth and the desired tilt in one direction.

LASER REFERENCE
Gives possibility to use rotating laser as a reference.

GRADIENT
The system can handle both pitch and roll.

UNDERWATER WORK
The bucket motion is shown in the graphical display.

ROLL
Sensors record and compensate for the machine tilt.

PITCH
Sensors record and compensate for the machine tilt.

COMPASS
The system uses a compass to establish the direction of the tilt.

HEIGHT ALERT
An audible signal warns the operator if the defined limit is exceeded. Useful around bridges and overhead lines.

iCON excavate
iXE3, 3D excavating system

With the 3D system from Leica Geosystems, you will work with high precision GPS and be able to monitor the excavation position by means of a digital model. The iXE3 enables you to use the excavator for point collection and stake out activities. iXE3 is suitable for projects requiring staking out, e.g. large road and infrastructure projects and subdivisions, industrial sites or dereliction works.

Connect the machine computer via the built-in GSM modem to get quick support and transfer files. Our 3D system enables you to take the last step towards machine control. Your efficiency rate will improve by up to 30% making it easy to gain return on the investment.

Clear screen display that can be easily read in strong sunlight

LED illuminated buttons

The wireless cradle makes it easy to place and remove the panel from the cab

SP sensor technology for excavators

Leica MS400 sensors with SP Technology open new opportunities for excavators, combining easy-of-use, unrivalled flexibility, and the highest precision at the fastest speed available on the market.

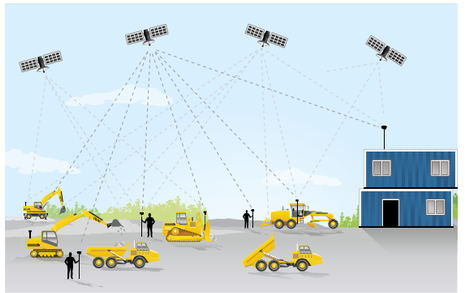
GPS/3D functions

3D GNSS
Our 3D system enables you to use dual slope in 2D and reference models in 3D.

2D or 3D
Switch between the 2D and 3D screens by just pushing a button!

ICON 3D software
Complete your system with iCON 3D, the software that allows you to create terrain models directly on the screen. A function that gives you great onsite freedom.

3D GNSS on your machine



The machine computer receives the machine position through a GPS signal and the bucket position from the sensor.

These values are then matched with the digital surface. You will see the bucket move over the design surface telling you how deep to go.

iCON excavate
iXE3, 3D excavating system

Experience the unique benefits of Leica iCON excavator machine control! Get your earthworks jobs done faster and right the first time. Save time and money by reducing rework and eliminating over excavation and grade checking. With Leica Geosystems' control system for excavators, you know the bucket position at any time. The system uses 3D design (CAD) models and state-of-the-art GPS/GNSS technology to guide the operator. Design information and real-time cut/fill indications are displayed in the cab for fast, accurate operation, increasing your precision and productivity from day one.

Slew guard
Slew limiting system

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

How it works
SlewGuard 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.

Specification
As the left or right slew limit is reached a hydraulic solenoid valve is released to cut off the relevant slew hydraulic service, and therefore prevent the machine from entering the exclusion zone. Slew operation in the opposite direction, back into the "safe" zone, is still permitted.

The system can be installed by any competent engineer, and there is no calibration required.

Application
The SlewGuard system is intended for use on excavators and cranes in the construction and utility maintenance industries where machines are restricted to working in confined spaces and there is a requirement to limit the slew movement of the machine.

Dozer Systems

Complete 2D and 3D solutions for all large earth moving projects

iCON grade
iGD2, 2D dozer system

Fully automatic blade control

Easy-to-use graphical display

Short learning curve thanks to smart menus

The PowerSnap system makes it easy to remove the machine control panel from the cab

Automatic tilt function

The automatic tilt function allows you to be in permanent control over the bulldozer blade.

Blade tilt sensor
The MSS130x inclinometer sensor is mounted on the machine to detect the tilt of the blade.

Automatic height function

The laser receivers have a capture angle of 360 degrees. The MLS720 or MD40 laser receiver is mounted on the mast for obtaining height. iGD2 can be installed with either single or dual laser receivers.

iCON grade
iGD3, 3D dozer system

Efficient grading using 3D design information

User definable views such as Plan View and Cut & Fill View

Clear screen display that can be easily read in strong sunlight

Integrated SIM card slot for connection to iCONnect services

Industry standard data formats

iCON 3D machine software supports standard file formats such as .dxf and LandXML eliminating the need for a proprietary office software package to convert data files.

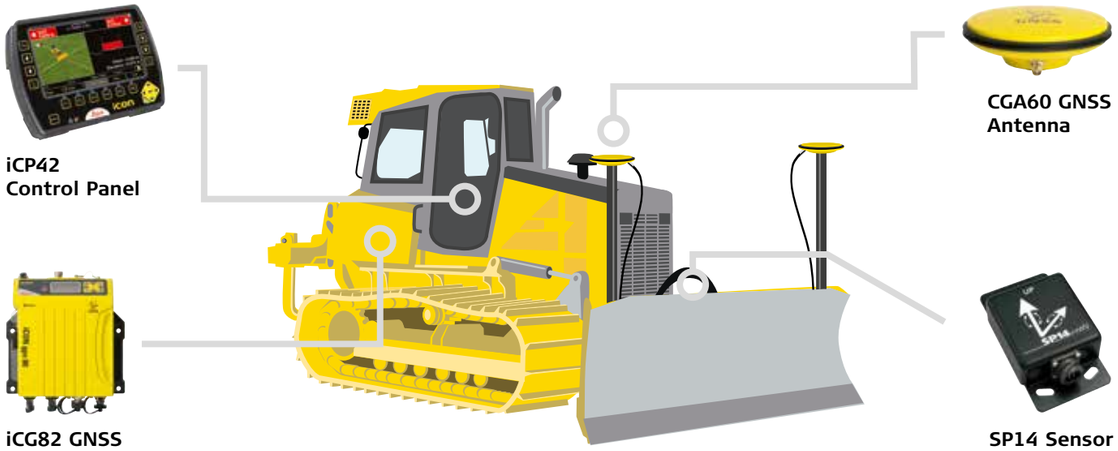
The iGD3 3D bulldozer system opens new dimensions in earthmoving and fine grading. It brings the design surfaces and alignments inside the cab. You are no longer dependent on stringlines, stakes or hubs. Work independently, and accurately, anywhere on the project design guided by GNSS system or iCON robot, Leica Geosystems' unique robotic total station.

iCON gps 80 GNSS receiver

Leica iCON gps 80 is a compact and rugged GNSS receiver especially dedicated for a wide range of machine control applications to increase the overall positioning performance on all construction equipment; such as bulldozers, excavators, wheel loaders, drilling rigs and pavers.

iCON grade
iGD4^{SP}, 3D dozer system

Multiply your dozer's performance by the power of SP



Combining SP Technology with a dual GNSS antenna solution allows the customer to operate their machine at full speed, while the blade is angled to efficiently control material from pass to pass. A customer can purchase an entry level GNSS system, iGD3 and then add additional components to the system as their projects dictate growing their system to a state-of -the art iGD4^{SP} dozer system.

Dual GNSS configuration

iGD4^{SP} is ideal for customers who have a six way (PAT) blade mounted on their bulldozer. Having a second GNSS antenna on the blade will improve the accuracies your bulldozer can achieve when working in very demanding environments such as steep slopes with the blade fully angled.

SP sensor

Leica Geosystems sensor technology provides high precision at higher speeds

Thanks to its unrivalled speed and precision, SP technology offers you new possibilities. The improved hydraulic control allows faster grading with more consistent results. The need for rework and the need for different machines will decrease dramatically. Maintain speed without sacrificing precision.

Grader Systems

Automatic elevation and slope control with our 2D and 3D systems

iCON grade
iGG2, 2D grader system

Fully automatic blade control – machine control plug in and play options

The Leica iCON grade solutions for motor graders offer new site preparation possibilities. The system regulates the elevation and crosslope by means of robust and high-tech sensors. The system helps you improve your productivity as well as save material costs. The iGG2 system is easy to upgrade. Start with a height control solution using laser receivers or an ultrasonic tracer and upgrade your system on the basis of your needs. You can step from a laserbased 2D solution to a complete 3D solution with a robotic total station by just adding the iCP42 panel and the iCON robotic station.

Easy-to-use graphical display – the same panel is used on your bulldozer and grader, giving you the ultimate in equipment flexibility

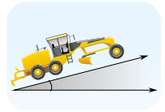
Short learning curve thanks to smart menus

The wireless cradle makes it easy to place and remove the panel from the cabin

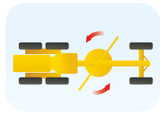
Multi-switch
Two switches are mounted on the up and down levers of the machine. You never let go of the controls.

Blade tilt sensor
The MSS1300 sensor, which is an inclinometer sensor, is mounted on the machine to detect the tilt of the blade.

Mainfall sensor
Mainfall compensation allows for precise grade and slope control whatever the project conditions.



Rotation sensor
The rotation sensor contains a potentiometer that establishes the rotation angle of the blade.



Ultrasonic sensors
The Leica Geosystems Trisonic uses the curbstone, adjacent road surface or a stringline to provide the reference elevation.

Laser receivers
The MLS720 & MD40 laser receivers with 360 degree range.

iCON grade
iGG3, 3D grader system
With optional side shift technology

Clear screen display that can be easily read in strong sunlight

LED illuminated buttons

The wireless cradle makes it easy to place and remove the wireless panel from the cab

Remote site and machine control access

The Leica ConX services include fast and easy data transfer from office to site and to construction machines, remote support for the operators and basic fleet management functionality.

iCON grade
iGG4, 3D grader system
Dual GNSS motor grader solution

Ultimate grade control for motor graders

To get the most out of a motor grader means using it as it is intended to be used. The Leica iGG4 for graders lets operators boost their productivity by using the latest GNSS technology to incorporate dual antennae, which calculate blade positions regardless of the way the machine itself is positioned.

Benefits

- Maximise the potential of your motor grader for a wider range of applications with higher accuracy.
- Run your machine in automatic mode, while moving with precision in any direction.
- Increase productivity and efficiency with your grader. The dual antenna configuration enhances accuracy, resulting in less rework.
- Difficult tasks are now easily done. Crab walk your motor grader to properly handle material windrows and precisely grade side slopes or create ditches.
- The scalable iCON grade solution lets you expand your grader's system as your projects grow in scope and size. You only invest in what you need.
- PowerSnap: same panel for any functionality level on any machine supported by iCON 3D.

System components

Dual GNSS grading solution – Precision and high productivity in any application

The dual antennae configuration for motor graders offers clear advantages over single mast GNSS solutions. Regardless of how the machine is positioned, the blade is calculated accurately, allowing you to grade precisely and efficiently.

Featuring the latest GNSS technology with the iCON gps 80 receiver, the iCON grade iGG4 system ensures fast and reliable grading in any application.

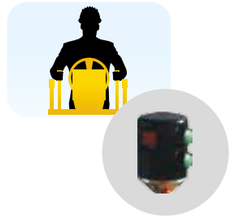
Leica iCON grade iGG4 allows you to finish your jobs quicker and more efficiently saving time, money and wear and tear on your machine.

PowerSnap – Providing a new level of flexibility and user convenience

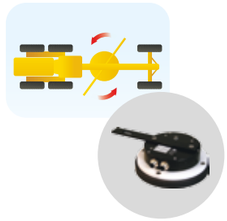
- System is up and running in no time
- Rapid interchange of control panels between machines, giving you extra flexibility on site
- One PowerSnap cradle for all iCON excavate and iCON grade panels
- Easy removal of core components for overnight security
- Contact and cable free connection to control panel
- Safety shut down feature protects system and data
- Unique patented Snap on/Snap off capability

Components for graders

Cross Slope

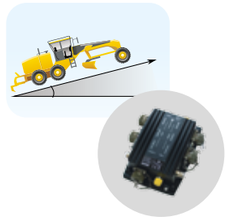


Multi-switch
Mounted on the control levers allow you to stay in control at all times – safer, faster and more productive.



Rotation sensor
The MRS1300 rotation sensor compensates the moldboard's rotation angle influence on cross-slope - set the blade exactly how you need it, iCON grade takes care of the rest.

Blade tilt sensor
The MSS1300 tilt sensor maintains the desired cross-slope precisely.



Mainfall sensor
Mainfall compensation allows for precise grade and slope control whatever the project conditions.

Elevation

Ultrasonic sensors
Using the Leica Geosystems patented Trisonic is very simple. The curbstone, adjacent road surface or a stringline provides the reference elevation for the moldboard. Ultrasound is often used as a reference on one side and cross-slope on the other.

Laser receivers
The MLS720 and MD40 laser receivers with 360 degree range.

Total Station/GPS
The Leica iCON measuring equipment fits seamlessly into your machine control system and the file formats used are supported wordwide. The iCON GPS and the robotic systems will help improve your productivity and precision right from the start.

iCP32 iCP42

Our machine control displays

Leica Geosystems offers both 2D and 3D solutions. With our unique PowerSnap system, one single 3D display can be used on your bulldozers, graders, excavators, and wheel loaders. This allows you to spread your investment across more machines and obtain a mixed fleet that you can use for many different tasks.

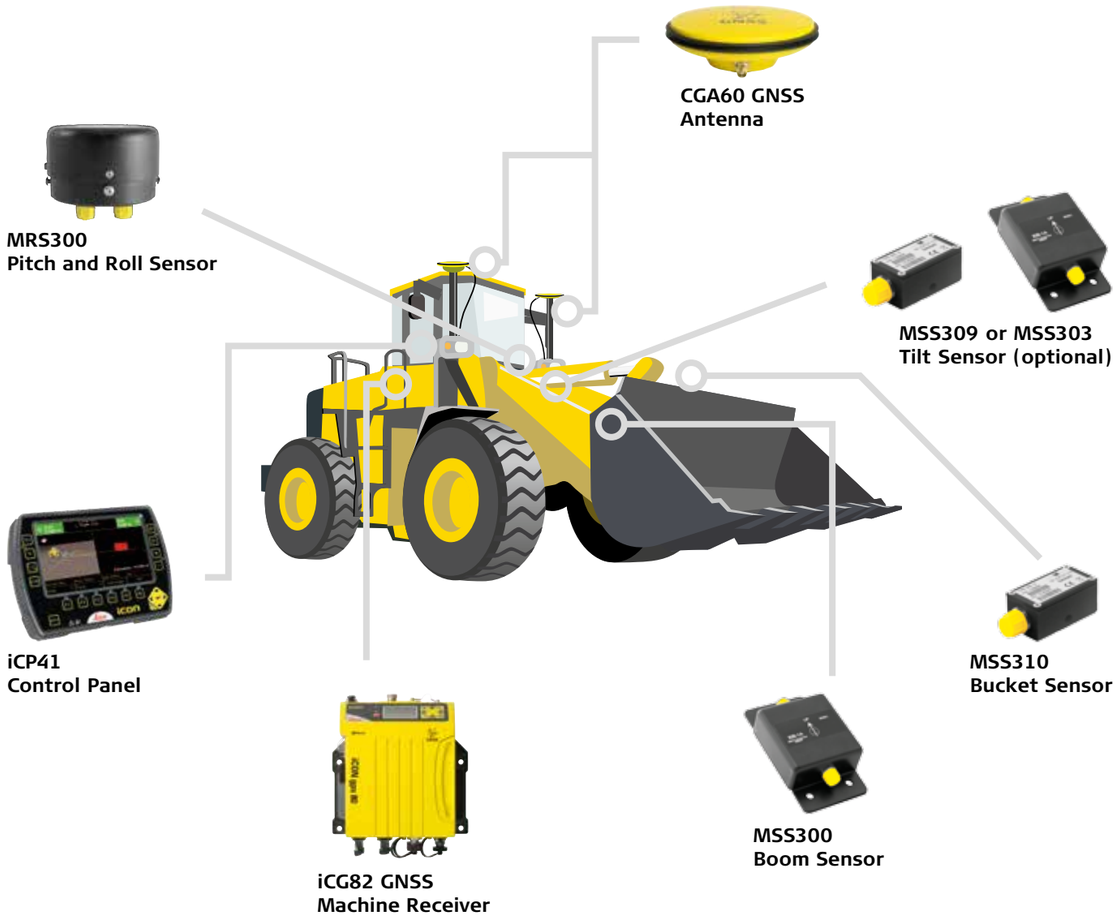
Wheel Loader System

Increase efficiency in earthworks

iCON grade

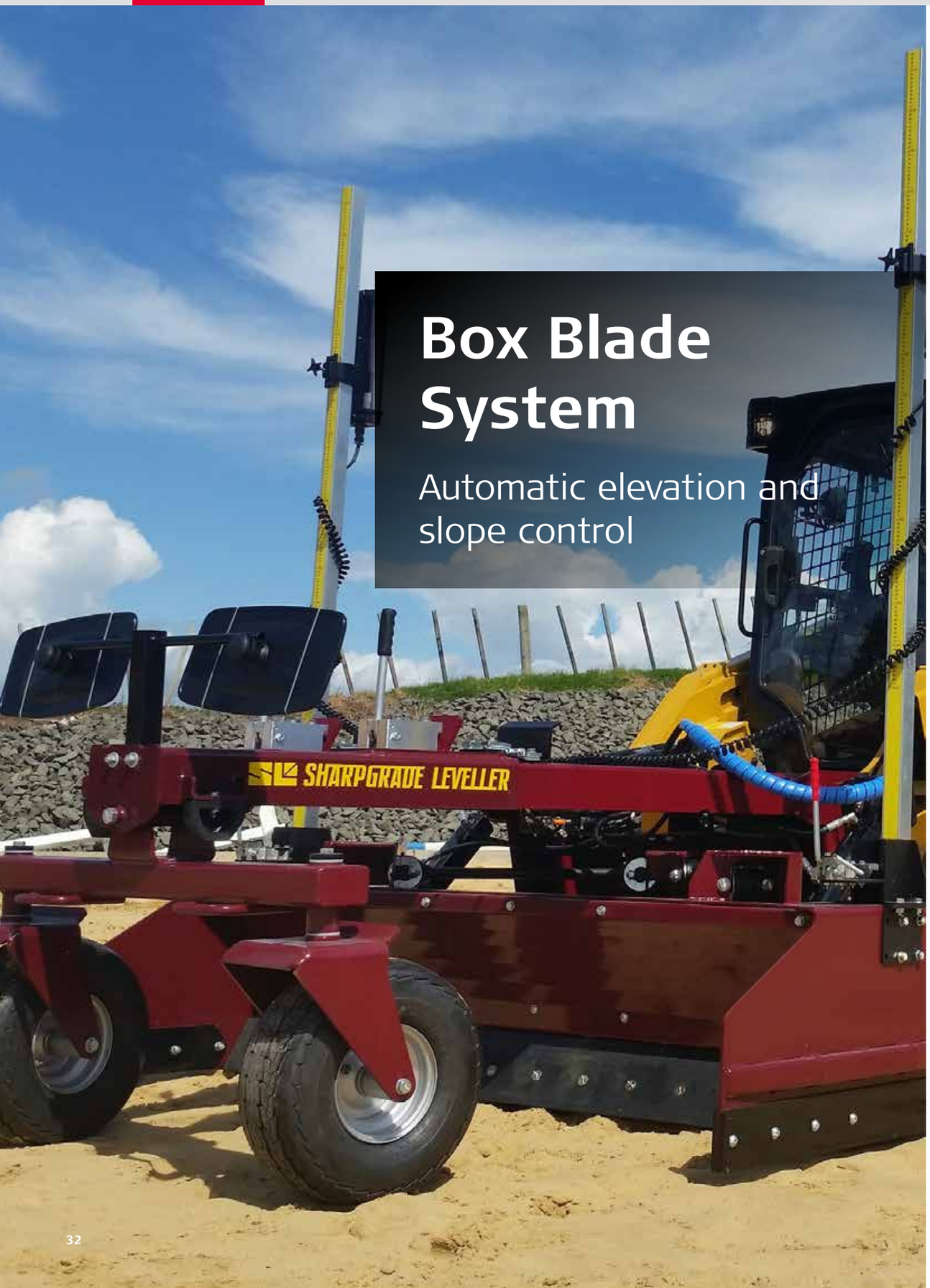
iGW3, 3D wheel loader system

Swift accurate levelling in soft material



Experience the unique benefits of Leica iCON grade machine control now in your wheel loader! Get your earthworks jobs done faster and right the first time. Save time and money by reducing rework and eliminating over excavation and grade checking.

With Leica Geosystems' control system for wheel loaders, you know the bucket position at any time. The system uses 3D design (CAD) models and state-of-the-art GPS/GNSS technology to guide the operator. Design information and real-time cut/fill indications are displayed in the cab for fast, accurate operation, increasing your precision and productivity from day one.



Box Blade System

Automatic elevation and slope control

iCON grade

iGSS2, 2D & iGSS3, 3D skid steer system

Fully automatic attachment control

Leica iCON grade for skid steers is the ultimate tool for box blades. This flexible system can be used for push blades mounted to a skid steer or drag boxes mounted to a skip loader. Single or dual laser configurations allow for height control only or height plus cross slope, giving you the ability to configure your system as the job dictates. Expand your system by adding the iCP42 and associated TPS or GNSS accessories and you have full 3D capability on your skid steer.

Easy-to-use graphical display

Short learning curve thanks to smart menus

The wireless cradle makes it easy to place and remove the panel from the cab

Clear screen display that can be easily read in strong sunlight

LED illuminated buttons

The wireless cradle makes it easy to place and remove the wireless panel from the cab

Multi-switch
The multi-switch can be mounted inside the skid steer cab, allowing the operator to remotely override the hydraulics on the attachment for raising and lowering at the end of a run.

Laser receivers
The MLS720 & MD40 with 360 degree range.

Drilling & Piling Solutions

One solution for all your drilling and piling needs

iCON rig

iCON iRD3, 3D Driller System
iCON iRP3, 3D Piler System

Leica iCON rig for drillers
Save time and speed up

Benefits of the Leica iRD3 solution for drilling

- Huge time and cost saving with every drilling job
- Eliminate or drastically reduce stake out work
- Wireless update of project files and remote support via telematics
- Integration with manufacturers' on-board computer system
- Avoid drilling in old and failed holes

Features of Leica iRD3

- Drilling complex patterns is a breeze – even directional drilling is possible
- Create drill patterns directly on the display
- Log holes on-the-fly and share with entire site via telematics
- Choose between body-mounting or leader-mounting of GNSS antennae
- Import drill patterns from Leica ConX

Leica iCON rig for pilers
Save money, boost productivity

Benefits of the Leica iRP3 solution for piling

- Huge cost savings and increased safety due to less people on the site
- As applied documentation is automated, there is no need to survey the finished project
- Save time and money with faster navigation between piles
- Check on your projects progress from the comfort of your office
- Complete large piling projects in short time

Features of Leica iRP3

- Eliminate stake out – start working immediately
- Document pile positions on-the-fly
- Faster navigation between piles
- Get real-time status of the project with Leica ConX
- Choose between body-mounting or leader-mounting of GNSS antennae

PaveSmart 3D

An advanced paver control system for concrete slip form machines, asphalt finishers and milling machines

Leica PaveSmart 3D

The result of 15 years knowledge and experience from the world's first provider of stringless concrete and asphalt paving, trimming and milling technology.

With Leica Geosystems' unique PaveSmart 3D control system, the machine is controlled without stringlines. Starting from the project data, the actual 3D position is measured by robotic total stations and/or GPS receivers and transmitted to the Leica Machine Computer.

High-accuracy machine-mounted slope sensors provide long and cross-slope. The results of this "design-vs-actual" comparison represent the elevation and slope corrections required to keep the machine on-grade, typically within an accuracy of ± 5mm (±3mm for concrete), depending on jobsite conditions.

PaveSmart 3D transmits corrections to the machine controller which regulates the hydraulics, in a similar way to controlling with the conventional sensors – meaning your crew doesn't need to be retrained to work with 3D.

Benefits of the Leica PaveSmart 3D

- Fully automatic grade, slope and heading control
- Works with the following industry-leading Slipform pavers manufacturers:
  - Gomaco
  - G&Z
  - Wirtgen
  - PowerCurbers & PowerPavers
- Supports all MOBAmatic (PWM & CAN) and Vögele NaviTronic/NivelTronic levelling systems and all modern asphalt paver brands
- Puts the project plans directly on the machine
- Imports from as good as every CAD system
- Puts crews in control of their own work – all paving information available at a glance
- Uses Leica Geosystems world-leading 3D sensor technology
- One supplier, one integrated modular solution

Roller Solution

Get the compaction job right the first time

Leica iCON roller

Save time and costs by avoiding over or under compaction

Leica iCON roller solution ensures the long lasting quality of an infrastructure or building. Small quality deviations could have cost-intensive consequences if the compacted ground in each layer is not suitable for the required load.

iCON roller makes the compaction work for the roller operator and the contractor easier and at lower costs helping to achieve higher compaction quality with lower risks for any kind of deformations or cracks.

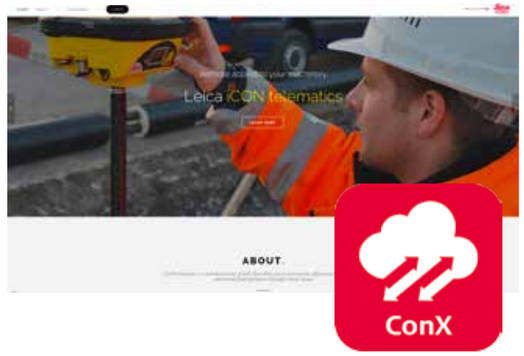
Achieve smooth compaction results every time for a long lasting foundation.

iCONnect

Connect your site and access relevant information anywhere

Leica ConX

Digitise your construction process with Leica ConX, a web-based suite of tools that harmonises and simplifies the data handling for your machine control operations, significantly reducing your downtime. Manage, monitor and share construction and survey data in real time wherever you are. This cloud-based collaboration tool allows you to efficiently manage all your connected construction projects, including third party platforms, and share job-related data with all stakeholders. With Leica ConX, non-experienced users will be able to



visualise and validate localised reference models, survey data and constructed as-built data in 2D and 3D.

View

View provides the project manager the ability to remotely view the operator's screen.

View enables remote diagnostic. If the operator needs help, the off-site supervisor can take action on the screen via remote access.

Support personnel can use this function to provide quick response when needed.

- Reduce machine down time and maintain productivity
- Reduce site visits and save time by remotely checking settings on the machine
- Increase uptime by scheduling operator training by using a remote instructor
- Save time by remotely monitoring data used on the machine

Sync

Design data for construction often need to be updated. Sync offers the possibility to upload the latest design data to your fleet immediately.

Manually uploading data via USB stick is no longer required. Data can be transferred remotely in both directions from the field to the office.

Remotely validate individual project files on machines in your fleet, ensuring they are up-to-date.

- Reduce machine visits and decrease downtime
- Save time and money by avoiding rework
- Effective handling of support and maintenance by remotely uploading the latest firmware

Track

Track is a fleet management tool which integrates seamlessly into the Leica iCON portfolio.

It allows you to monitor the machine fleet in real-time and provides reports. Entry and exit can be monitored for multiple geographical areas. Several reports can be created, such as activity, routing and others filtered by calendar, time, geographical area and/or machine type.

- Quick reponse by use of real-time reporting
- Improved day-to-day operations by recording results on the utilisation of equipment
- Save time and reduce repetitive work by generating on demand reports or create predefined schedules
- Monitor the utilisation of equipment on site

Leica iCON MCH100

Monitor your earthmoving machines with Leica ConX and iCON MCH100

Machine utilisation monitoring

Excessive downtime, overtime and poor allocation of resources are all threats to keeping an earthmoving project on track and within budget. Understanding where machines are and how effectively they are being used is critical for the modern job site to reduce cost and maintain your competitive advantage.

Leica ConX now offers a solution that makes it easier than ever to measure and monitor key performance indicators of all earthmoving equipment on your projects, helping your organisation deliver on time and within budget.

Integrated into Leica Geosystems 3D machine control solution or used as a stand-alone unit, the Leica iCON MCH100 makes it possible to monitor machines of any type with a simple installation and no need for calibration or extensive setup.

Machine utilisation analysis

- Create custom schedules for each project to closely monitor if machines are being used according to plan
- Intuitive graphs to visualise excessive downtime, overtime and daily, weekly or monthly utilisation trends
- Compare projects, machines types or customised groupings

Machine location monitoring

- Remotely monitor the real-time location of all of your machines
- Always know how machines are distributed across projects, where and when they are working

Intelligent machine connectivity

- Connect machines of any manufacturer or type
- Option to communicate wireless data over 2G/3G/4G cellular or Wi-Fi networks
- Wireless integration to Leica Geosystems iCON 3D machine control solution for enhanced connectivity

Key benefits Leica ConX - utilisation module

- Know where machines are working in real time
- Use project schedules to easily identify costly downtime
- Monitor overtime and off-schedule machine activity
- Compare performance across projects, regions or custom groupings
- Analytics visualised in modern and intuitive user interface
- Accessible from any internet connected device

Key benefits Leica iCON MCH100

- Real-time machine location reporting
- Measure and remotely monitor machine activity
- Stand-alone or wireless integration with iCON 3D machine control
- Simple and non-invasive installation with no calibration necessary
- Rugged design suited to earthmoving environment
- Wireless network connectivity for any machine type 2G/3G/4G Cellular or Wi-Fi network support

Leica iCON EarthMover
Controlled earthmoving, exactly as specified

Increase your productivity with Leica iCON EarthMover

Trucks, machines and personnel are expensive – delays, rework and penalties are costly. With Leica ConX you can increase machine uptime through remote access to your machine control units. With the EarthMover, the latest addition to Leica ConX, you can monitor and streamline your earthmoving activities from one productivity platform.

No complicated hardware installations or complex software solution – Leica ConX with the EarthMover is easy-to-use, flexible and powerful – just like that.

Equip your truck drivers with an iPad, iPad mini or iPhone; then you can benefit from all these features from any internet connected computer, tablet or smartphone.

Take control of all the big cost for trucks, excavators, bulldozers and their operators, and most of all your success.

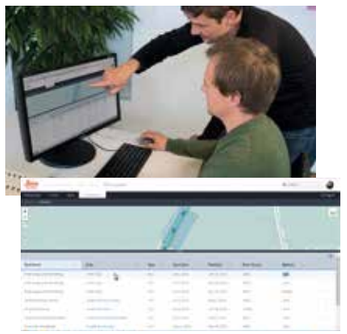
Benefits
- Avoid additional costs caused by delays, penalties and rework
- Increase site safety with less people on site around the machines
- Reduce the project's carbon dioxide footprint by reducing fuel consumption
- Mitigate project risks by identifying issues at an early stage and sharing information with stakeholders
- Improve project planning and execution by measuring your efficiency today and adjusting current processes

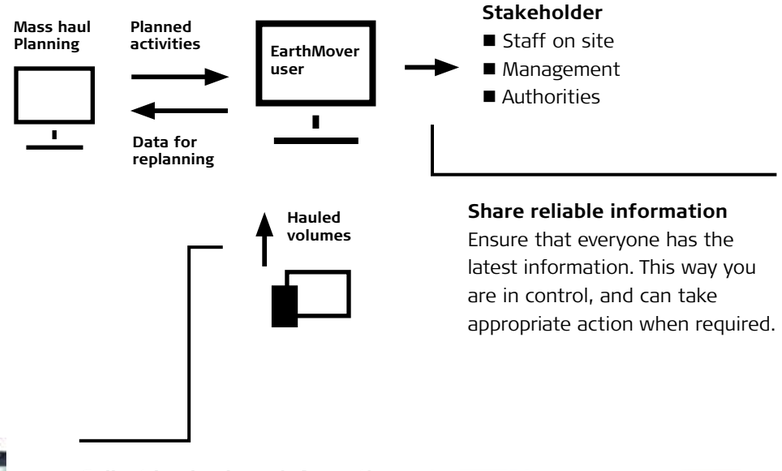
Additional advantages:
- Fits perfectly into established workflows
- Easy-to-use, works on smart phones and tablets
- No need to replace existing software

Sound information for decision-making and an optimum workflow in just a few steps
You simply need a Leica ConX account and the free driver's app for your haulage truck, and you can start monitoring your earthmoving operations in real-time.

Compare hauled volumes with planned activities
Make early and informed decisions as soon as a discrepancy exists between planned and actual. Track material movement to ensure the project adheres to specification.

Import planned Cut & Fill activities
Import planned Cut & Fill activities into the EarthMover. Each activity contains information about geographical area, execution time and material type.





Share reliable information
Ensure that everyone has the latest information. This way you are in control, and can take appropriate action when required.

Collect haul volume information
Truck drivers use an iPad, iPad mini or iPhone to log position, time and material type of each load and dump. This information is automatically sent to the EarthMover in Leica ConX.

SmartFix
GNSS RTK Network Service

SmartFix is a subscription based service offering GNSS Network RTK corrections throughout New Zealand.

SmartFix delivers:
- cm level real-time kinematic corrections
- post-processing solutions
- sub-meter GIS corrections

SmartFix is NZ's most extensive GNSS Reference Station Network providing a real-time kinematic (RTK) correction service over the internet, and RINEX files for post-processing.

You don't have to be a Leica user to enjoy the benefits of SmartFix. If the GPS or GNSS receiver can connect to the internet, SmartFix can deliver the data you need.

SmartFix delivers coordinates in terms of the National Datum [datum 2000]. With a high quality network solution your GNSS errors are minimised and confidence optimised.

SmartFix subscriptions are available on a casual or annual basis and include support from our dedicated SmartFix team.

SmartFix offers real-time data products for dynamic machine control, vehicle and pole applications. SmartFix is perfectly tuned to ensure uninterrupted positioning during typical machine manoeuvres.

The **iCON GNSS** rovers are tuned to ensure uninterrupted construction site operation in the event of:
- Machines, vehicles or poles moving across the boundary between any two base stations in the network
- Base station outage in the network
- Outage in SmartFix network processing (automatic fallback to single site corrections)

Machine control applications demand varying levels of accuracy. Real-world performance testing with SmartFix has shown that optimal machine performance can be expected.

SmartFix Ensures:
- Maximise construction site productivity
- Maximum machine uptime and
- Best machine positioning performance possible

* Measurement precision and accuracy in position and height are dependent upon various factors including number of satellites, satellite geometry, observation time, ephemeris accuracy, ionospheric conditions, multipath etc. Further, RTK network cell design and station separation have a significant influence on the obtainable measurment precision and accuracy. Figures quoted assume normal to favorable conditions and network design. The figures quoted are based on measurements performed with GPS and GLONASS. A full Galileo and GPS L5 constellation will further increase measurement performance and accuracy.

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