

Leica iCON alpine solution

Snow depth measurement
& snow management



leica-geosystems.com



- when it has to be **right**

Leica
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Snow, slope and infrastructure management – A complete solution from Leica Geosystems

iCON alpine snow management is a comprehensive suite of tools including the 3D snow measurement solution that delivers real-time data on the in-cabin display showing exact snow depths under the blade. This enables the operator to respond to snow conditions immediately and perfectly prepare slopes according to a 3D reference model.

With **alpinePRO** you can expand your solution to a complete management system for your entire resort infrastructure. Use alpinePRO for comprehensive analyses, assessment and planning. You can even take alpinePRO with you on the fly with the mobile app that allows you to assign tasks, create reports and communicate with the office when you are out on a mission or on patrol.



One for all

Digitalise your ski resort with one software and one hardware platform. Switch from one machine to another and build complex designs with simpler workflows and less downtime.



Easy to use

Simple, clean and intuitive user interface with interactive user design adapted to your needs. The assistive technology with wizards and help functions help you drive the snow groomer and get more work done with high quality and less rework.



Robust design

With robust design the Leica MCP80 control panel and the Leica MDS series docking station are prepared for the harshest environment and makes it a truly resilient solution.

Complete snow management solution – From a **single source**

Snow management begins with slope construction, influences the technical equipment and placement of the snow guns and continues through to snow depth measurement and control during operation. Leica Geosystems offers a complete snow management system from one single source.

Leica iCON alpine

On-machine measurement

- Snow depth measurement and visualisation
- Terrain model - a digital summer terrain model or snow depths from previous ideal seasons can be used
- Slope borders, hydrants and anchor points can be included in the model



alpinePRO

Management Cockpit

- Analysis and planning
- Operational management
- Mobile App
- Task Manager
- Coordination of Rescue Services

New

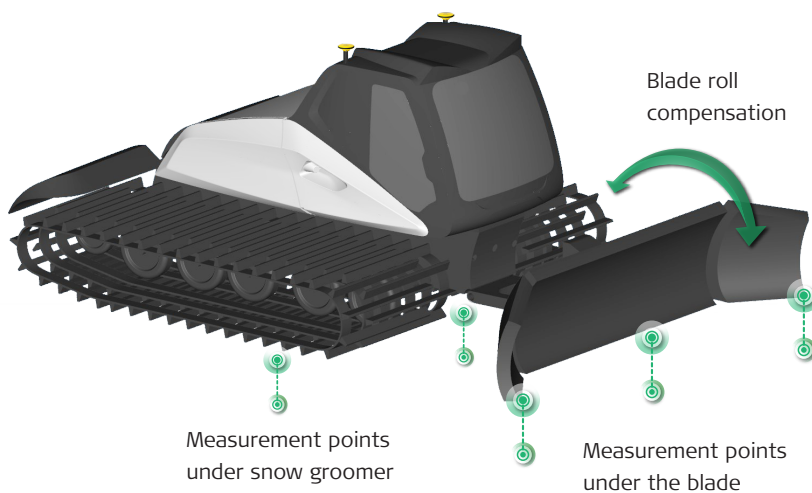


Leica iCON alpine – Accurate snow depth measurement and snow management

Snow is valuable as a raw material, especially technical snow. Whether it is natural or man-made, maintaining and utilising it in an optimal way throughout the entire ski season is a challenge that enables potential for great savings. This is why an increasing number of winter sport resorts are relying on modern GNSS technology for efficient management of their slopes.



- Measures snow depth down to the centimetre
- Enables even distribution of the snow when constructing the snow surface
- Permits the snow groomer to be positioned optimally in relation to the terrain model



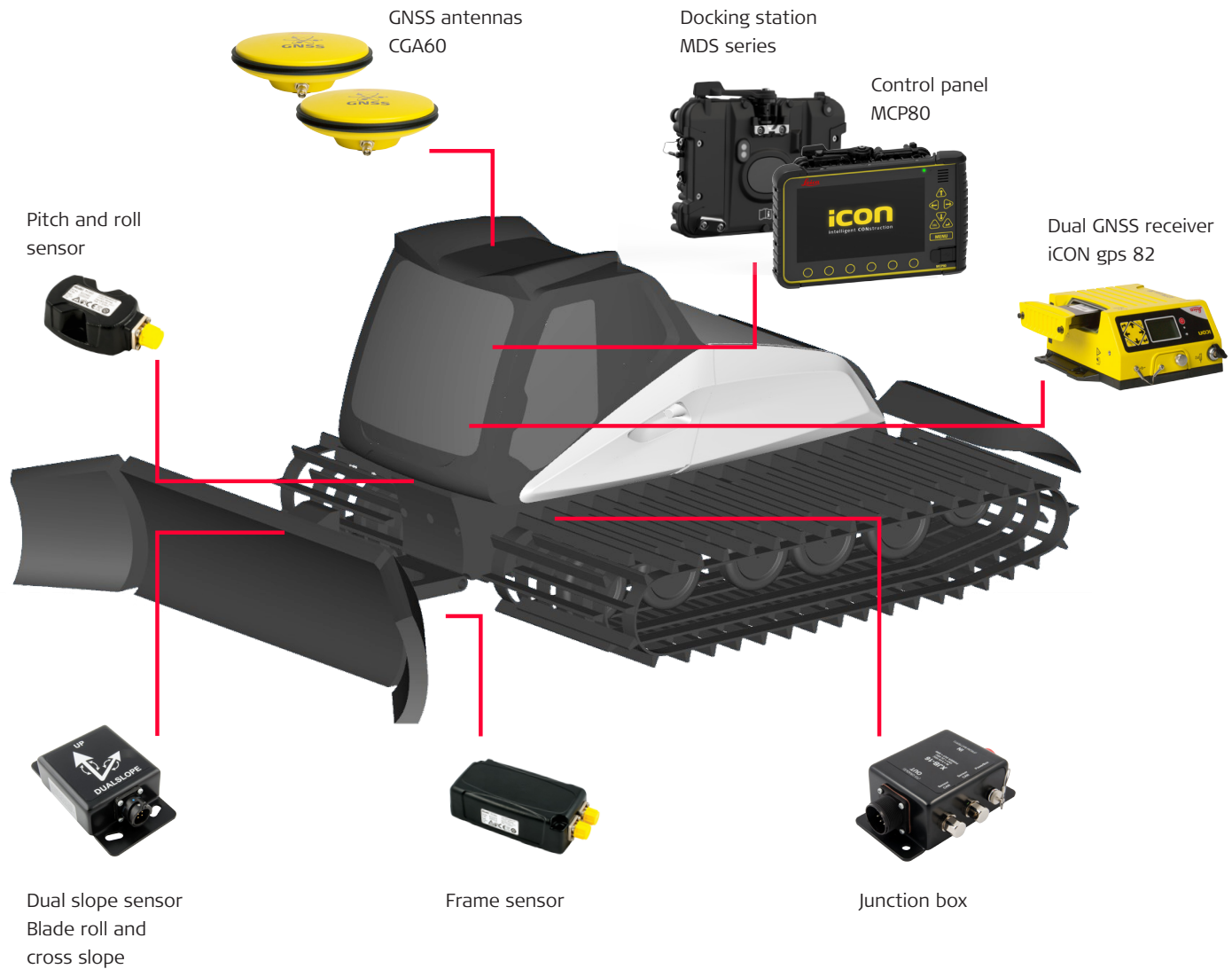
Advanced sensor technology

Three-point measurement under the blade reduces the risk of collision with the terrain and ensures precision when working with a tilted blade.

Three measurement locations ensure more precise positioning of the blade according to the design model.

The dual slope technology ensures blade roll compensation which significantly enhances the accuracy of the snow depth measurements when rolling the blade up or down. Blade roll compensation is an advantage when grooming slopes and when creating snow parks and competition courses.

Leica iCON alpine – Full 3D control of your snow groomer



One panel

The MCP80 control panel is the easy-to-use industry-leading interface that can be used across all 3D machine applications. The panel features a large touch-screen panel with backlit buttons - personalise it to your liking and take it with you from one machine to another. The MDS series docking station stores your latest calibration values for easy swapping of the panel. The docking station makes the panel completely cable-free for easy removal.

One user interface

One software platform for all machines with a simple and intuitive user interface. The operator just turns the key and gets on with the work. The interactions support the workflow of the task at hand, and the clean interface makes it easy to find the functions you need keeping consistent on the different machines you work with. The assistive technology with wizards and help functions help you drive the snow groomer and get more work done with higher quality and fewer errors.

Leica iCON alpine – Assistive user interface to customise your run screen



Change height tolerances

Swipe to select the run screen that suits the task at hand. Visualise your work with color coded height mapping, and set your height tolerances directly from the run screen.



Alignment of blade

Select the run screen with focus on the three measuring points under the blade, e.g. when building ramps.

Align the blade regardless of the position of the snow groomer.



Log points overview

Log, name and navigate directly to points of interest, e.g. hydrants, anchor points for winch cable, trees, masts, etc.

Leica iCON alpine – Allocate snow exactly where you need it



Cost efficiency

Well-founded and targeted slope management extends your skiing season, reduces operating costs considerably and allows you to work in a more environmentally friendly way.

- Less demand for technical snow thanks to precisely plannable snow production
- Lower fuel consumption
- Fewer vehicle hours and machine wear
- Prevents penetration of the snow layer thanks to unique snow plough control
- Prevents collisions with water taps and technical installations under the snow

Sustainable

Through systematic analyses and assessments, you have extensive knowledge of your skiing area and can thus sustainably ensure the quality of your slopes. Statistics enable long-term, multi-season planning.

- Early detection of weak points with low snow depths
- Identification of locations with extra snow
- Optimum, targeted snow making and preparation

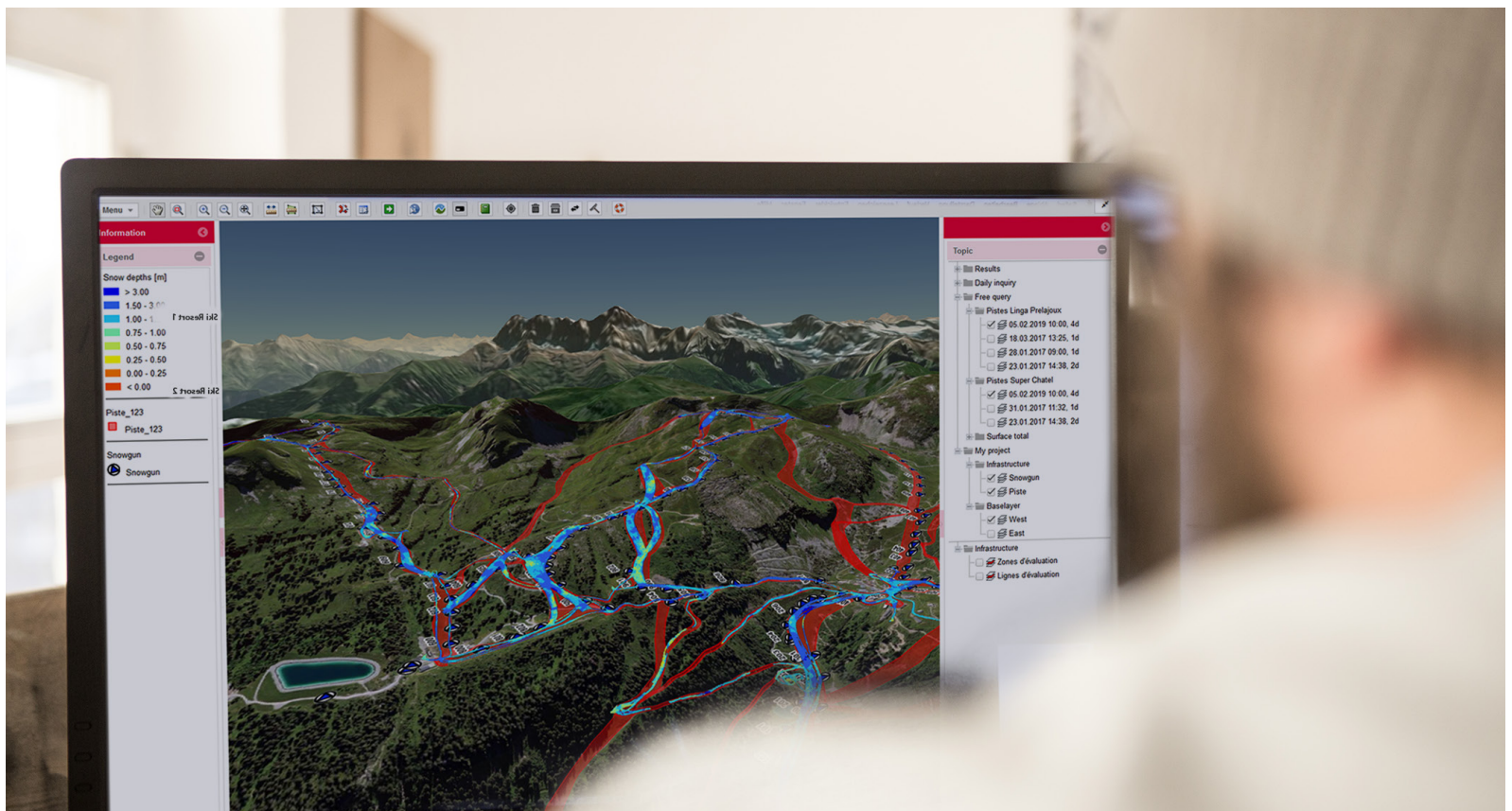
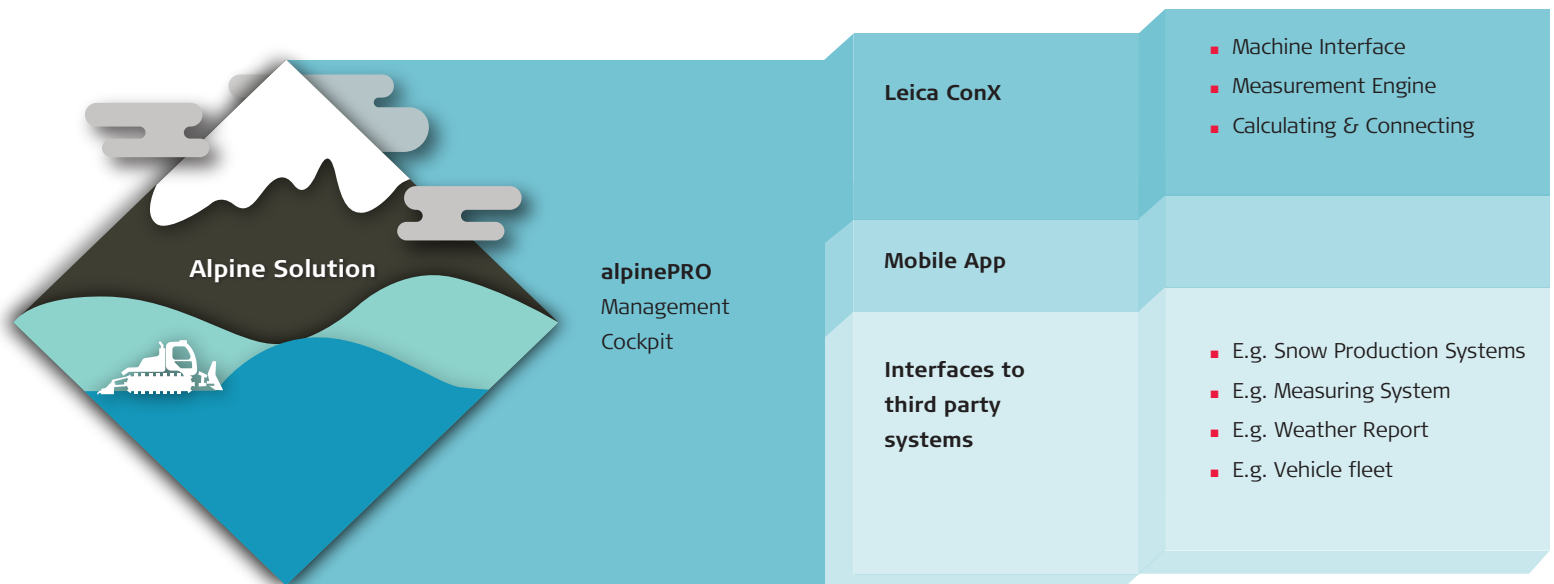
Real-time snow management

The display in the snow groomer visualises the current snow depths under the snow groomer in a 3D terrain model accurately down to the centimetre and in real time. Targeted slope management increases productivity.

- Precise snow making
- Targeted utilisation of depots of saved snow
- Precise calculation of extra snow

alpinePRO – Efficient snow, slope and infrastructure management

alpinePRO can be used to integrate iCON alpine with a management system for your entire snow infrastructure with comprehensive analysis, assessment and planning functions. The web-based, modular geo-information system comprises:



alpinePRO – Analysis, assessment and planning



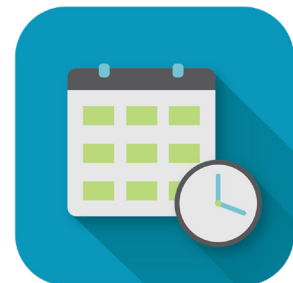
Analysis

- Analysis of snow production by using overlay maps
- Display and utilisation of any GIS data in 2D and 3D
- Assessment of operating data for a mixed fleet
- Open interfaces for available data to server
- Integration of additional data from third-party systems for networked analysis



Measurement

- Snow depths across the entire region, punctually and continually
- Assessments of the snow heights (e.g. volume and differential calculations)
- Volume calculations for snow park creation
- Status indication of the snow guns

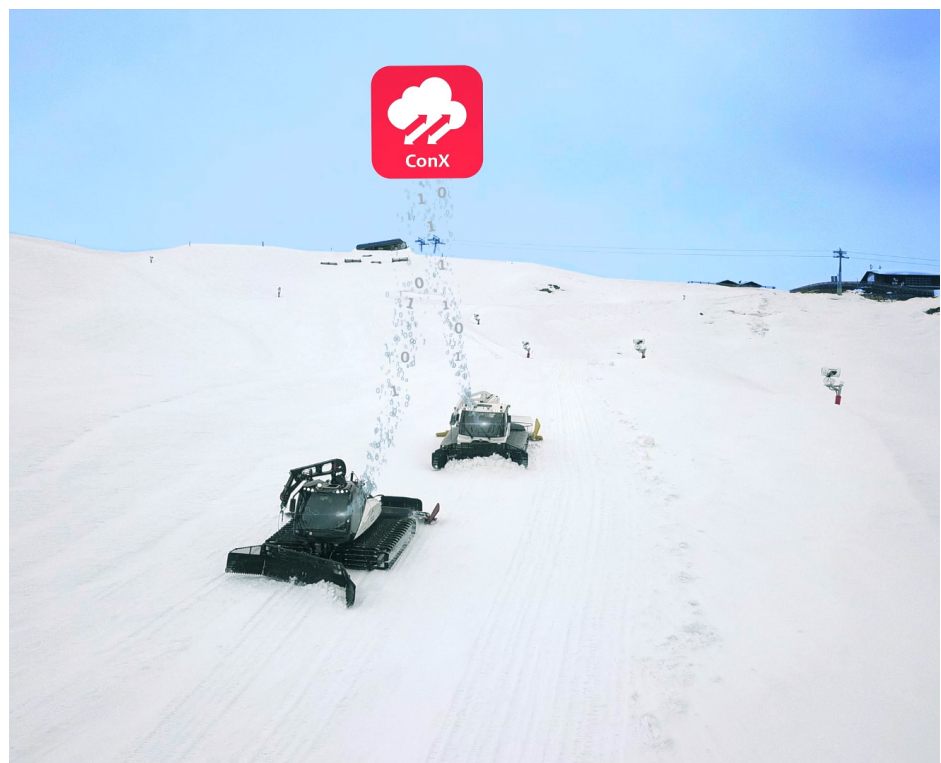


Planning

- Less demand for technical snow thanks to precisely plannable snow production
- Snow depths across several seasons for optimal snowmaking and slope planning

Data sharing and visualisation

Leica ConX is the data platform in **alpinePRO** for sharing, visualising and aggregating measured results. Leica ConX allocates terrain models, links and tracks your machines. It allows snow groomers to share information via the cloud and across the fleet and allows remote support to ensure easy training of operators and troubleshooting.



alpinePRO mobile app – Take alpinePRO with you *on the fly*

Use the alpinePRO mobile app to take alpinePRO with you out to the resort. Use the app to create, manage and assign tasks to the team, and synchronise all data with the alpinePRO server. Use the alpinePRO app to communicate between site and office, create reports, and attach pictures from the ski resort for documentation of repair work, issues with the lift or other tasks. The Rescue menu is specially designed to track and report when you are out **on patrol** and you can select the **on mission** mode for exact geo-referencing of your position and for reporting and documentation when an accident occurs.



Leica iCON alpine solution - Creating snow parks and competition course the **intelligent** way

The Leica iCON alpine solution saves you time and costs when preparing a fun park or a course for competitions. Use alpinePRO to accurately calculate the snow volumes for the fun park creation and the requirements for allocation of saved snow or technical snow. Import 3D files from snow park designers directly into the Leica iCON alpine solution and build the course precisely by measuring the exact heights of the jumps and turns while minimising the manual work.



Leica Geosystems – when it has to be right

Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems is the industry leader in measurement and information technologies. We create complete solutions for professionals across the planet. Known for innovative product and solution development, professionals in a diverse mix of industries, such as surveying and engineering, building and heavy construction, safety and security, and power and plant trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world.

Leica Geosystems is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technology solutions that drive productivity and quality across geospatial and industrial landscapes.



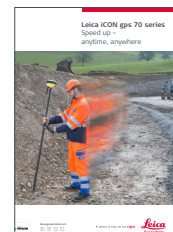
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Leica Geosystems AG is part of Hexagon AB. 835373en – 04.19



ConX brochure



CCP brochure



iCON gps 70/T flyer

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