

Your shortcut to better accuracy and

VisualDigger™ 3D. Intelligent Excavator Guidance

Stakeless earthworks is the key word. VisualDigger™ 3D Excavator Guidance puts the 3D road design right in the cabin, enabling the machine operator to excavate dirt faster and more accurately than you could ever imagine.

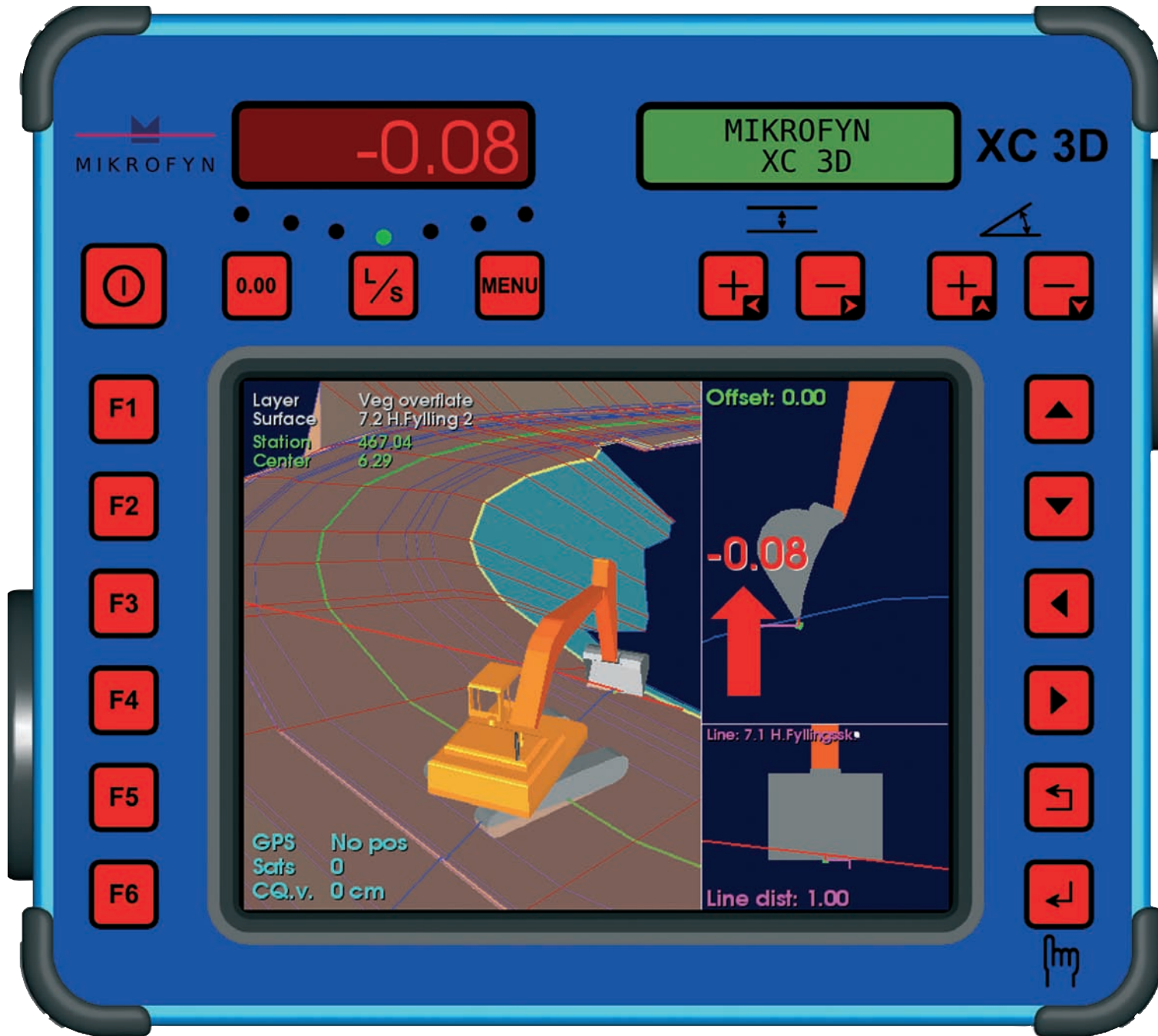
You will benefit
VisualDigger™ 3D Excavator Guidance is your shortcut to faster project completion - reducing downtime, improving accuracy and reducing costs by getting done in fewer passes using less material.

Mikrofynd has brought space age technology down to earth to give you the most operator friendly and efficient excavator guidance system on the planet.

We will make the average driver an expert in just minutes keeping your company on the competitive edge.



Be focused
When focusing on efficiency and profitability, you know that bad precision, reworks and waiting for surveyors can break your bottom line. VisualDigger™ 3D will give you the competitive edge on your earthmoving projects by supplying you the most accurate, efficient and operator friendly 3D machine control systems on the market.



Rely on experience
We know that experience counts. At Mikrofynd we powered up the first 3D excavator guidance system more than 10 years ago! No other 3D machine control supplier can show similar experience.

Today, almost 1000 3D machines – Excavators, Graders, Dozers and Pavers – are relying on Mikrofynd for 3D Machine Control.

VisualDigger™ 3D Excavator Guidance is in essence an add-on to the worlds best selling 2D Excavator Guidance System – the MikroDigger™.

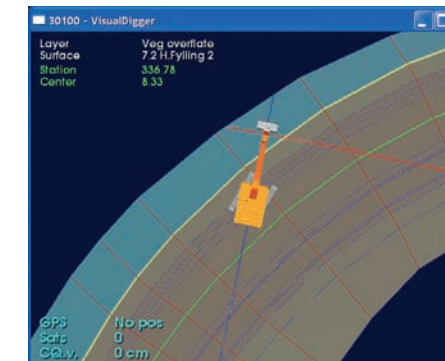
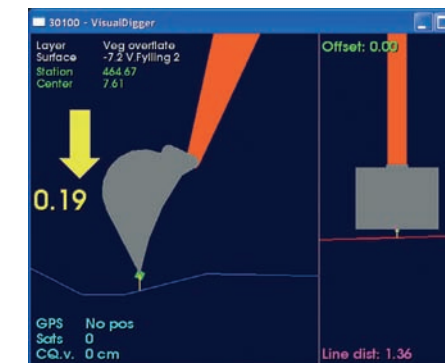
The more than 4000 machine operators today working with the MikroDigger will immediately be familiar with the use and operation of the VisualDigger™.

VisualDigger™ 3D Excavator Guidance Software

As always, Mikrofynd choose to base the design on the day-to-day needs and functionality as the machine operators and supporting engineers sees it. With almost 1000 3D systems running it has been easy for us to gather ideas and get feedback from the field. This has lead to the present design of the VisualDigger™ 3D software.

VisualDigger™ 3D is extremely operator-friendly
When the system has been installed on the machine it's GO from the start. Less than 10 minutes of instruction is all it takes before the operator can start excavating.

When the operator becomes familiar with the use of the software he can start re-tailoring the screens, data overlays and quick-keys to his liking.



XC3D display and control unit runs the VisualDigger™ 3D software

- Control box mounted in snap-off cradle
- Only one box in cabin.
- No keyboard and no reflecting touch screen overlay.
- Full 2D MikroDigger functionality if GPS is lost.



Quick Keys for faster action
A number of user configurable quick keys are available to the operator. These Quick Keys activate frequently used functions with just the push of one button like – changing view, 3D model or activating data logging.

Quality assurance
The machine operator quickly comes to rely on the guidance information. He must therefore be warned if something is wrong.

VisualDigger™ 3D issues clear warnings and displays them to the operator if anything goes wrong. This comprehensive error detection also enables the support crew to quickly determine and correct the error and get the machine up and running in no time.

Easy installation
A MikroDigger 3D System can be installed in just a few hours so you do not have to wait valuable production time. All our dealers have visited our production and test facilities to become certified installers.

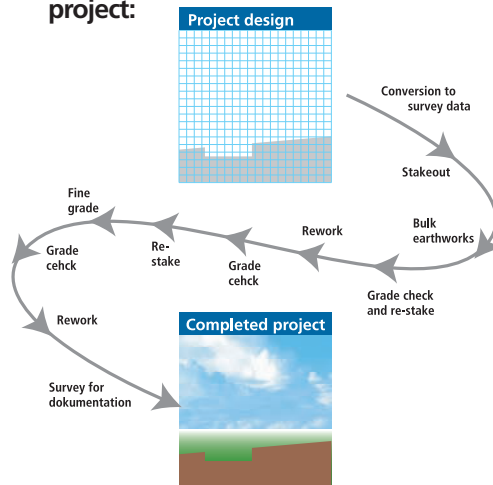
better results



Re-think your work procedure

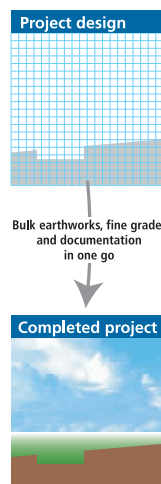
Keeping the competitive edge demands constant adjustments and adaptations of new work procedures if these can improve your productivity.

Now – take a look at the traditional work flow on a road construction project:



First you need to convert the project data to a vendor specific data format for the surveyor to perform the stakeout. Then the surveys will go into the field and do the stakeout. The survey markers will be run over during the first few passes and the survey has to do it all again – and he may not be in the neighborhood when you need him - so you have to let the machine wait until he is ready. And so it continues with grade checking, re-work and re-staking.

Now compare this to the way you work with the VisualDigger™ 3D



The 3D design file is transferred directly from the office computer to the XC3D control box in the machine. The machine operator can see the design and now control the excavator in relation to the design finishing on one go. When the construction is completed the operator can record the bucket position along with other relevant information to form the final documentation.

A VisualDigger™ excavator guidance System will ensure that the operator has all the information he needs – when he needs them. He will not have to get out of the machine constantly to check grades as he can stay in his cabin checking his work as he moves along.

The Machine Operator will never have to wait for the surveyor. He will never remove too much material that has to be filled back – in fact experience shows that you will save as much as 12-15% on your material budget. If say bedding sand is delayed the machine can be moved to an other part of the project – just ask the operator to load another 3D reference file. Your machine becomes much more flexible almost eliminating downtime.

Now you understand why VisualDigger™ 3D is an investment for the future.

Get the benefits

- VisualDigger™ 3D Excavator Guidance System will
- Reduce rework considerably
 - Make your machines more efficient
 - Reduce you material usage
 - Almost eliminate you surveying costs.
 - Reduce machine downtime
 - Finish jobs faster
 - Improve profitability

To put it short – our 3D machine control will improve your productivity and profit.

For more information see
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Since the start in 1987 MIKROFYN A/S has placed itself among the top-five worldwide manufacturers of professional precision lasers and machine control systems. MIKROFYN is a closely held company. The profits of the business are reinvested in new products and growing the business. MIKROFYN is built upon sound principals of developing and manufacturing state-of-the-art products, supported by experts and cooperating with outstanding professional local distributors! MIKROFYN recently doubled the manufacturing space and is committed to expanding the product offering in parallel with the continued expansion of the worldwide distribution network.

VisualDigger™ 3D

Your shortcut to Stakeless Earthmoving



MIKROFYN

Intelligent Machine Control
Easy to use - easy to afford

productivity

It stays right

When the MikroDigger system has been calibrated once you will never need to calibrate it again.

The solid state angle sensors are highly reliable and very rugged. They work from -40° to +70° and can even be used under water up to 25m head of water with standard cables.

One or two GPS antennas?


Why bare the considerable cost of a second GPS receiver when you can do without? More than 95% of our MikroDigger™ 3D excavators working on land use only one GPS receiver.

Almost 700 satisfied customers is the best proof of the reliability and accuracy of this one-antenna approach.

Only machines working on barges or other unstable platforms will need two GPS antennas.

The VisualDigger™ 3D software will accept position data from most GPS receivers.

Both GPS and GLONASS



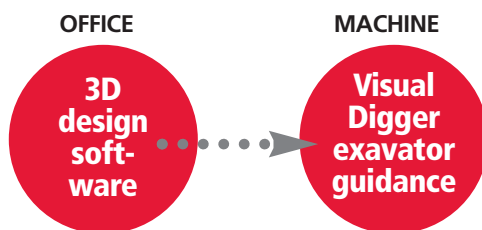
GPS is ideal for excavator positioning. Combine the 24 GPS satellites with the GLONASS system you have 38 satellites in total. This gives you the best possible GNSS coverage..

Better coverage means less downtime. Good coverage is particularly important when working in urban canyons, mountainous terrain or in deep mines or excavations.

Mikrofyn has got the best GNSS solution for you. The Mikrofyn JB3000 is based on the Leica MNS1200 GPS/GLONASS receiver but we have added a few extras, like build in Radio or GSM modem and junction box for the complete Machine Control System. The unit is completely sealed (IP68) and can be mounted anywhere on the machine as it can be remotely controlled from the Mikrofyn XC3D control box in the cabin. Now you no longer have to remove the receiver at night to protect against theft.

From 3D Design to Construction

When you have received or completed the 3D design in your engineering software you want to transfer the 3D files to the Machine Control System for construction.



Most competitors will at this point tell you that you need to buy their special software to generate data files for your 3D Machine Control System.

This means that you have to spend time and money getting your data into another format for construction. Will this improve you efficiency? We don't think so.

No extra software needed

Most of our customers have used Autodesk AutoCAD, MikroStation, NovaPoint, Carlson and other 3D software packages for years and are familiar with these.



We believe that our customers should be able to take their own 3D designs and use these directly in our VisualDigger™ 3D Excavator Guidance Software.

We believe that by supporting a number of non-proprietary formats (open standard formats that no single vendor controls) we support our customers.

LandXML – the data format for the future

We therefore chose LandXML to be the internal 3D data format for the VisualDigger™ 3D Excavator Guidance Software.

This was the logical choice as LandXML is becoming the industry standard for modeling and describing civil engineering and survey data.

The LandXML standard has been endorsed by most major land development software and hardware vendors, including Autodesk, Bentley, Carlson, Geopak, Intergraph, Leica, Topcon and Trimble.



For a complete list of software vendors supporting LandXML please refer to: <http://www.landxml.org/>

For proprietary formats supported by VisualDigger™ 3D Excavator Guidance Software please refer to <http://www.mikrofyn.com>