



# INTRODUCTION

Thank you for your interest in STAR\*NET – helping you get the most out of least squares!

MicroSurvey STAR\*NET is an easy-to-use application that adjusts 1D/2D/3D survey networks using rigorous least squares techniques. Collect your measurements & GPS vectors more efficiently AND build confidence by ensuring your field data is both accurate and correct.

If you have used STAR\*NET before, you will recognize the same powerful network adjustment functionality that has been used by survey professionals for more than two decades. With the new Version 7, you will find better organization of the reports and plot windows, as well as a handful of workflow tools to ensure you can validate and correct your network as efficiently as possible.

Visit the MicroSurvey website to download a free 10-point demo version of STAR\*NET, or call us to line up a free online demonstration.

## About MicroSurvey

For over 25 years, MicroSurvey Software Inc. has developed a family of specialized computer software for land surveyors, civil engineers, mapping technologists, engineering technicians, drafting technologists, police officers, and accident reconstruction specialists. MicroSurvey supports what it builds, and the staff values and listens to its customers.

### Our Mission Statement

The MicroSurvey Mission defines the way we do business and how we serve our customers. In 1985, we set out on a mission to create solutions that would offer our industry innovative technology and exceptional value.

The way we perceive and react to the ever-changing worldwide business climate continues the MicroSurvey tradition of innovation and value.

We engineer technology that is designed to work the way people think. We empower people – not machines.

Our solutions for surveying, construction, engineering and accident reconstruction are inspired by our uncompromising standards for integrity, quality, leading-edge technology, support and value.



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# OVERVIEW



## FOR THE SURVEYOR, CONTRACTOR OR ENGINEER THAT REQUIRES A FAMILIAR CAD ENVIRONMENT

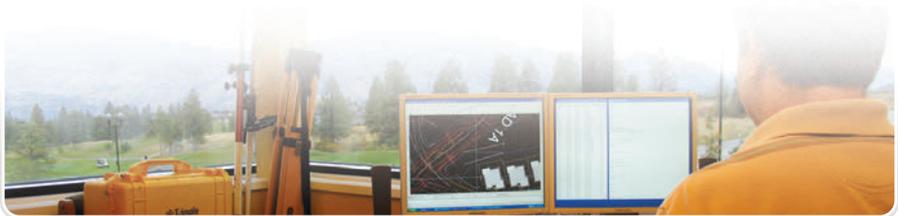
**Running** within your existing copy of AutoCAD®, inCAD is a complete survey drafting, COGO, DTM, traversing, volumes, contouring application with data collection interfacing. inCAD is compatible with field data from all major total stations and data collectors – all as an extension to AutoCAD®.

**Surveyors** all over the world use MicroSurvey software to complete their infrastructure and design projects. MicroSurvey has been building software for the surveying industry for over 25 years and with all this experience, we are able to offer the best surveying CAD software packages available today.

For some added flexibility, we offer two different versions of inCAD. Our **Standard** edition has several core surveying computation tools. The **Premium** edition adds surface modeling, roading tools and complete site design capabilities.

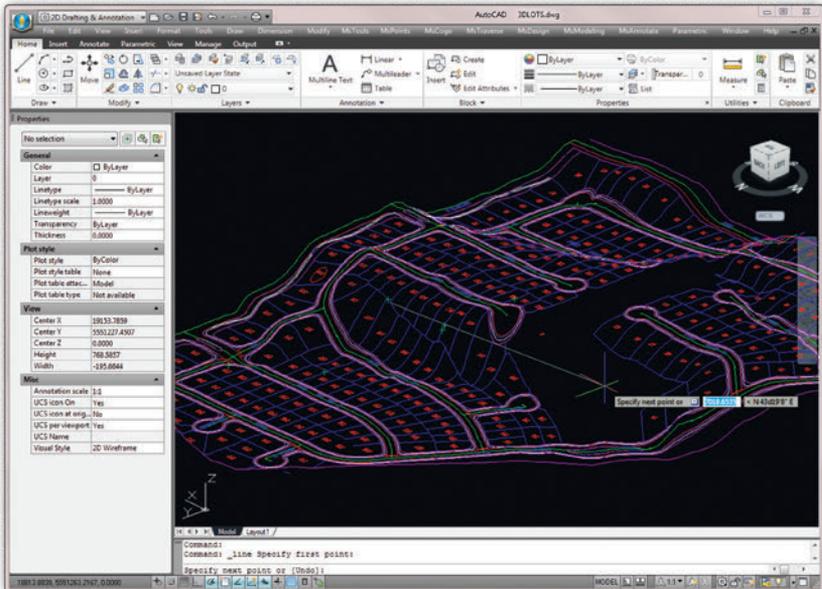
**MicroSurvey** is an Autodesk® authorized developer. MicroSurvey inCAD runs on AutoCAD 2013, and uses DWG as its native format. The command set, toolbar and menu structure remain unchanged, with exception to a plethora of MicroSurvey tools added to the main menu.

**We** value and listen to our customers and we support what we build. MicroSurvey's technical support has been ranked number one by industry professionals and our customer service is world class. MicroSurvey inCAD has hours of training movies, which equates to reading thousands of pages of manuals. Learning while you work has never been this easy.



## inCAD Utilizes the AutoCAD Engine

Old habits are hard to break. This program is built for surveyors that want to stick with the industry standard CAD interface and engine, while having the ability to compute coordinates, balance traverses, annotate drawings, compute areas, and every other tool relevant to the modern surveyor.



The AutoCAD engine supports powerful drawing tools, cube navigation, mesh modeling tools, spline and polyline editing, geometric and dimensional constraints, multifunctional grips, object and layer transparency – the list goes on. And it utilizes a great ribbon menu system.

Looking above the ribbon, you will see the engine has been extended to include all of the advanced drafting and design tools – a must-have for any professional surveyor, contractor or engineer. Covered in detail in the following pages.



POWERED WITH  
AUTODESK  
TECHNOLOGY

Autodesk  
Authorized Developer

# inCAD FEATURES



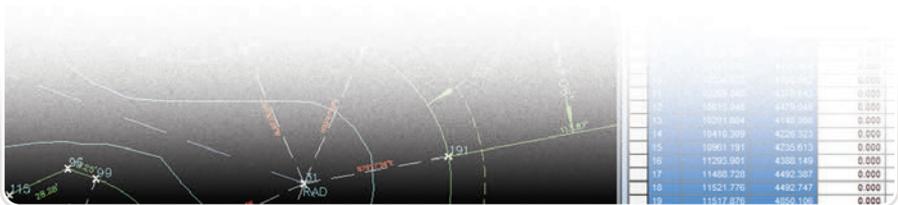
## MicroSurvey's ACTIVE DRAWING TECHNOLOGY

**MicroSurvey's** active drawing technology is an efficient way to work with your survey data. It enables verification, editing, printing and manipulation of data in the drawing, in the coordinate and traverse databases, and during COGO calculations.

**Active Coordinate Editor.** Dynamically view and edit coordinate data with changes reflected immediately in both the coordinate editor window and in the drawing window. MicroSurvey inCAD operates intuitively: Selecting a point in the drawing will open the editor and highlight that coordinate in the editor automatically. Alternatively, selecting a coordinate in the editor will zoom to that point in the drawing.

**Active Traverse Editor.** Verifying and editing your raw data is now much faster and allows for painless correction. Traverse data is represented in a smart, spreadsheet-like editor that has incredible drag and drop capabilities. The active traverse editor not only allows you to work with your raw data at any point in the traverse quickly, but it also allows customization of the views available and opens multiple traverse data sets simultaneously. Errors in your traverse data are amazingly easy to spot and fix.

**Active Batch COGO.** Batch COGO is a system for data entry and calculation that allows you to browse an entire COGO entry history, quickly identify errors and easily make changes. At any point, COGO entries can be edited and reprocessed with the correction immediately reflected in the drawing. The interface is built with smart tags for data types like traverse, bearing-bearing intersection, distance-distance intersection and more. MicroSurvey's active batch COGO is like nothing else on the market!





## POWERFUL DTM CONTOURING/MODELLING VOLUMES

**MicroSurvey inCAD** creates surface models at lightning speed. With very fast modeling engines, you can manipulate surfaces by adding or removing points, work with breaklines, and create boundaries. We stopped testing triangulation speed when it broke through the 100,000-points-per-second level. Visualization in MicroSurvey inCAD is unmatched with fast 3D rendered views of TINS, grids, and triangulated grids.

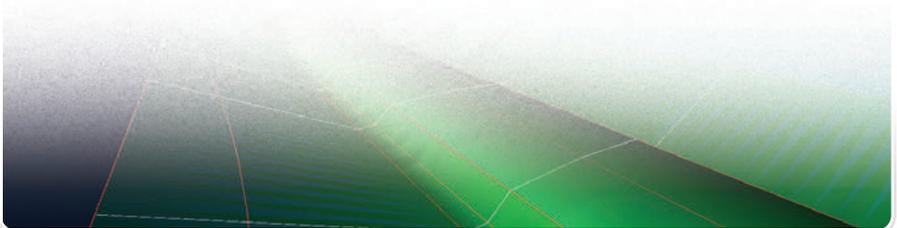
- Full 3D rendering
- Virtually unlimited point capability
- Simple to use: Create a DTM and contour in four simple steps



## COMPLETE SITE DESIGN

**MicroSurvey inCAD's** road design wizard makes creating a 3D road along a horizontal and vertical alignment a snap. Creating templates is easy with our graphical template editor. Multiple passes can be made down a road with various templates to create a multi-level surface.

- Site Design: Ponds, ditches, stockpiles and slopes
- Road Design: Horizontal and vertical alignments, cross sectional templates
- Create cross sections of existing ground and design surfaces



# inCAD FEATURES



## TOP PRODUCTIVITY ENHANCEMENTS

### Powerful Survey Calculations

- COGO – MicroSurvey has the simplest, most productive COGO entry inside a CAD system. Record all of your COGO entries automatically with our Batch system. Edit the Batch with a spreadsheet style editor and reprocess!
- Data collector communication: MicroSurvey inCAD is designed to work with data from all major total stations and data collectors
- Helmerts Transformation
- Multi-point averaging, cluster analysis, right of ways, areas, fixed areas, mass intersections, multiple perpendicular ties, stake computations, the list is endless
- Coordinate transformations – easily transform data from one system to another (UTM, State Plane, MTM, etc.)

### Complete Traverse or Network Adjustments

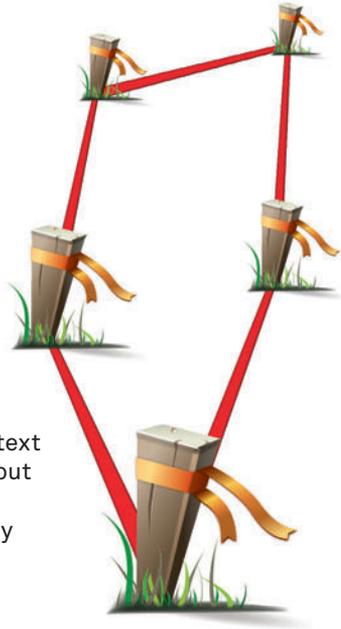
- Angle balance
- Transit, compass, Crandall's Classical Methods
- Vertical balance
- Full 3D least squares adjustment
- Blunder detection
- Instrument storage
- Graphical ellipse display
- Reprocessing and pre-analysis

### Smart Information

- Smart objects: lines, points, curves and text
- Pick and edit objects automatically without initiating a command
- Browse the entire coordinate database by simply picking any point in your drawing

### Customizable Interface and Commands

- AutoCAD's standard customizable ribbon interface
- "Drag and drop" panels to customize your workflow
- Dock/undock frequently used toolbars
- Hide or resize panels for larger graphics area
- Adjust location of command window





# inCAD FEATURES

## MicroSurvey inCAD EDITION COMPARISON

	Premium	Standard
Read/write AutoCAD DWG (R 2.5 to 2011) and DXF files	●	●
AutoCAD linetype, hatch file, shape file, font file compatible	●	●
Full COGO Calculations	●	●
Full alpha-numeric point identifiers	●	●
Create lots and blocks quickly and efficiently	●	●
Create and place buildings or structures with flexible input – reuse and re-edit any building or structure	●	●
Efficient staking programs: compute stakes, select points with all CAD commands and generate automatic reports for field crews	●	●
Automated block/lot creation with dynamic building pad placement	●	●
Right-of-way design	●	●
Coordinate transformations (SPC, UTM and more)	●	●
Data collector interfacing (all major brands)	●	●
Traverse coordination, closure, balancing	●	●
Active drawing technology – coord. editor, traverse editing, batch COGO	●	●
Survey calculations – Linear regression, clusters; line, curve and point calc.	●	●
Field-to-finish diagramming, layering, symbol placement	●	●
Bearing, distance, elevation, description, number placement	●	●
Full suite of text commands - text, sliding, rotating, scaling, spell checking, plus advanced text placement tool	●	●
Basic editing commands – move and rotate	●	●
Basic drawing commands – line, arc, point	●	●
3D least squares adjustment with blunder detection, custom instrument settings, graphical ellipse plotting	●	●
Comprehensive drawing commands – Dtext, Mtext, line, arc, point, 2&3D polyline, hatching, splines, curve fitting, 3D faces, polyface mesh, more...	●	●
Powerful editing commands – trim, extend, fillet, chamfer, copy, more...	●	●
Raster imaging – Georeferenced TIFFs, JPG, BMP, Digital Photo support	●	●
Surface modeling – TIN, Grid, TGrid	●	
Contouring	●	
Multi-surface volume and bound area volume calculations	●	
Sewer drafting	●	
Alignment design and labeling	●	
Cross section template editor	●	
Profile plotting & vertical alignment design	●	
Cross sectioning calculations and plotting	●	
3D Surface model visualization with rendering	●	
Site Design (grading and volumes)	●	

# HARDWARE SUPPORT



## MAJOR HARDWARE DATA COMPATIBILITY

**MicroSurvey inCAD** is compatible with data from all major total stations and data collectors. Data downloads automatically with MicroSurvey FieldGenius data collection software. For a complete list of devices supported please see the web page and contact information supplied on the first or last page of the brochure.

## HARDWARE REQUIREMENTS

**MicroSurvey inCAD** runs on AutoCAD running within the Windows operating systems (Windows XP through Windows 7). We suggest the following basic system requirements as a minimum for efficient operation:

- 1.6GHz or better processor; multi-core preferred
- 2GB RAM or more
- 250MB free hard disk space (plus AutoCAD installation)
- Video resolution set to 1024x768 or higher
- Mouse, digitizing tablet or other pointing device
- Available USB port for the USB license key

In order to use the data collector communication features, your system will also need an external RS-232 serial port or a USB connection for the best performance with MicroSurvey FieldGenius.





## **READ WHAT PROFESSIONALS IN THE FIELD HAVE TO SAY ABOUT THE ENHANCED TOOLS BUILT INTO THE MicroSurvey CAD, embeddedCAD AND inCAD SOFTWARE PACKAGES**

*“MicroSurvey CAD meets the main criteria that I, and I think most surveyors, are looking for. It provides a package that is easy to use, increases productivity, and won’t set a small to medium sized firm’s budget on its ear. If the user is even vaguely familiar with AutoCAD or one of MicroSurvey’s previous products, then the learning curve is nonexistent. This is one of the most user friendly applications that I have seen in nearly thirty years of using computers!”*

**John Gallagher**

**of Robert B. Holzman, PLS**

*“MicroSurvey excels at training through their product videos. If you have a question about a feature, chances are that they will have a video that will show you how it’s done. If you are like most other surveyors, you need to get up to speed as quickly as possible with new software. As the software becomes more feature rich and complex, manuals just don’t cut it anymore, except for quick reference. The videos are all short and to the point, laying out the procedures for only one or two commands in each segment. I was able to use them and get up to speed very quickly.”*

**Shawn Billings, LS**

**Texas**

*“MicroSurvey has bridged the difficulties of complex COGO needs with a professional drafting platform for surveyors. Coming from an AutoCad background, the transition to yet another survey software program was not a problem with MicroSurvey. Most of the questions I had were well explained in the training movies that came with the program. When I needed more technical assistance in managing the connectivity to my Leica TCR, help was immediate and without the delays encountered in some of the other developers I had tried. One of my better business decisions was to select MicroSurvey.”*

**Wm. Brannon, LS**

**New York**



# PRICING



## THE MOST COMPETITIVE PRICING IN THE INDUSTRY

### MicroSurvey inCAD Full Product

Premium (Full CAD engine plus advanced design tools)	\$1,995
Standard (Full CAD engine)	\$1,495

### Maintenance Subscription and Product Support

Standard Support, 90 days from date of purchase	FREE
Premium Maintenance Subscription*	\$395/yr
Standard Maintenance Subscription*	\$295/yr
MicroSurvey inCAD Training (MicroSurvey Center)	\$1200/wk

\*Maintenance subscribers receive support and FREE upgrades.

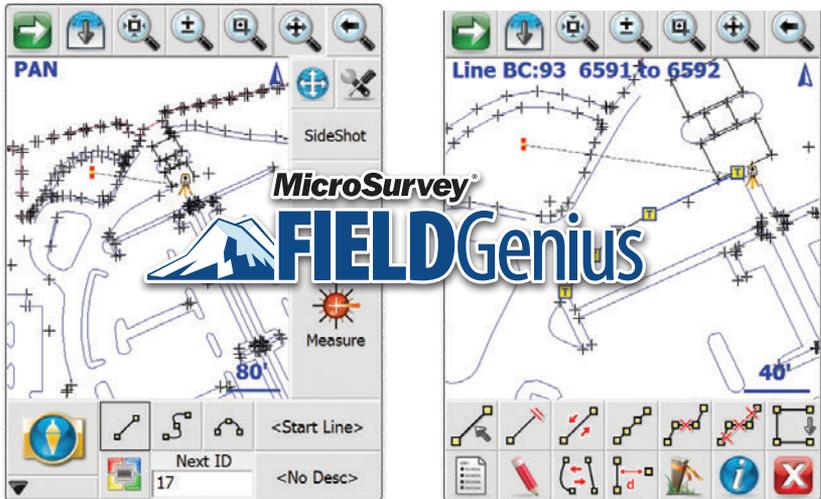
### MicroSurvey embeddedCAD Upgrades (inc. 1 year maintenance)

Upgrade from MicroSurvey inCAD <b>2014</b> Premium	\$795
Upgrade from MicroSurvey inCAD <b>2014</b> Standard	\$695
Upgrade from MicroSurvey inCAD <b>2013</b> Premium	\$995
Upgrade from MicroSurvey inCAD <b>2013</b> Standard	\$795
Upgrade from MicroSurvey inCAD <b>2012</b> Premium	\$1,195
Upgrade from MicroSurvey inCAD <b>2012</b> Standard	\$995

# RELATED SOFTWARE

## POWERFUL FIELD DATA COLLECTION SOFTWARE

**FieldGenius** has evolved into the most powerful and productive data collection software in the world. Advanced roading, surfacing, slope staking, code-free linework, smart points, full robotic and GPS support and live graphics make FieldGenius the choice of organizations that value productivity. FieldGenius is compatible with all major brands of total stations and Windows Mobile/CE hardware.



*"The combination of FieldGenius and MicroSurvey CAD gives me a complete software solution for surveying. The integration of the field and office software is unbeatable. Data processing is a breeze. From small stakeout jobs to large developments, MicroSurvey has me covered!"*

**Mark Cahill, BCLS**

**AllTerra Land Surveying & Geomatics**



# RELATED SOFTWARE

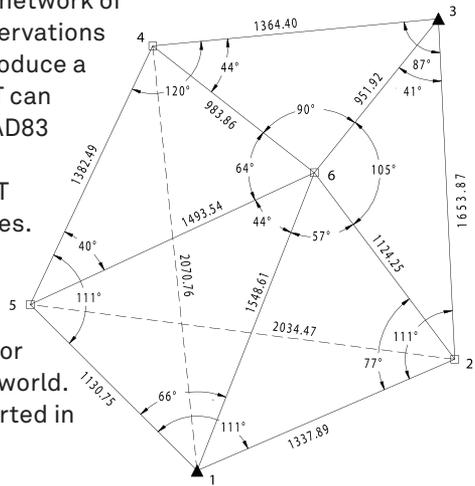


## STAR\*NET – NETWORK ADJUSTMENT UTILITY

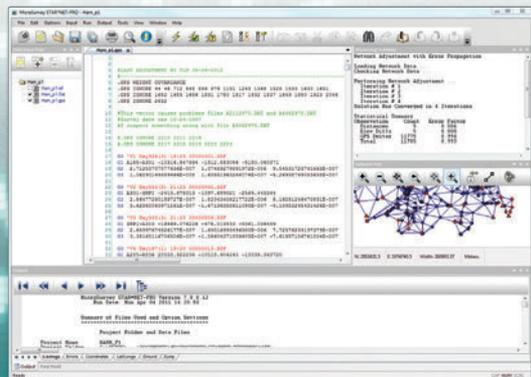
MicroSurvey STAR\*NET is an easy-to-use Windows application that adjusts 2D/3D survey networks using rigorous Least Squares techniques.

STAR\*NET handles networks containing conventional observations with up to 10,000 adjustable stations. Differential leveling observations can also be included within a 3D adjustment. Whether a survey consists of a single-loop traverse or a complex network of interconnecting traverses, all observations are adjusted simultaneously to produce a single best-fit solution. STAR\*NET can reduce observations to NAD27, NAD83 or UTM with separate grid factors calculated for all distances and t-T corrections calculated for all angles.

Custom Transverse Mercator and Lambert grids may be defined for special local requirements or for grid systems in most areas of the world. Angular measurements are supported in both Deg-Min-Sec and GONS.



Choose from these versions: Standard, PLUS, PRO and LEV, plus several handy conversion utilities to ensure you get precisely the tools you need.



MicroSurvey  
**STAR\*NET**

# TRAINING AND SUPPORT

All MicroSurvey products come with 90 days of FREE support, which includes email and phone support. While on a support plan, you also receive free service packs and upgrades as they become available. Here are some other useful support resources:

[Training Material](http://www.microsurvey.com/helpdesk) ([www.microsurvey.com/helpdesk](http://www.microsurvey.com/helpdesk))

Available for free on the MicroSurvey Helpdesk are hundreds of training videos and articles. No access fees, no limitations. Search the knowledge base for answers to your questions – basic or advanced!

[User Forums](http://www.microsurvey.com/forum) ([www.microsurvey.com/forum](http://www.microsurvey.com/forum))

The user forum is an excellent community in which to bounce questions off other professional users, like you.

[Feedback Forum](http://feedback.microsurvey.com) ([feedback.microsurvey.com](http://feedback.microsurvey.com))

The Feedback Forum is a revolutionary tool that allows YOU to direct the development of the MicroSurvey products you buy. It collects your suggestions and allows you to vote on suggestions submitted by the other professionals using the software. Use your votes wisely!

[Classroom Training](http://www.microsurvey.com/training) ([www.microsurvey.com/training](http://www.microsurvey.com/training))

Want something a little more hands-on? MicroSurvey invests in the best trainers and training facilities.

Receive instructor-lead training while using your own workstation and copies of all software used in the course.

Call for booking, or view our training schedule online.

[Thank You](#)

Please call us or visit our website for more information on how this, or other MicroSurvey products, can help you improve your productivity!



Train with MicroSurvey in one of many facilities across Canada and the US.



# **MicroSurvey**<sup>®</sup>

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