

## IntelliCAD 2001 by Cadopia

By George L. Rowe, P.E.

### Introduction

A few issues ago in this magazine I reviewed TurboCAD 7.0, a powerful low cost 2D/3D CAD solution. As I did my research for that article I realized that CAD users now have many choices when it comes buying CAD software. No longer are we limited to the \$3000+ per seat packages. There are products on the market that sell for under \$500 that do two dimensional drawings very well and some that even do 3D rendering such as TurboCAD. In this article I'll review another low cost alternative called IntelliCAD 2001 by Cadopia. Because IntelliCAD is an AutoCAD 14 clone with AutoCAD 2000 file compatibility (according to Cadopia) I make reference to these programs for comparison purposes.

### Background

IntelliCAD has an interesting history. The Company Visio, makers of easy-to-use diagramming software entered the CAD market in 1998 with the release of IntelliCAD 98. It was marketed as an AutoCAD 14 clone at a cost of less then \$300. After a number of free upgrades many different industries began to take notice. I remember visiting an engineering newsgroup and the "buzz" was this new CAD software that was "identical" to AutoCAD 14 at a tenth of a cost. Just as this Cinderella story was about to unfold, Microsoft came along and purchased Visio.

Microsoft's interest in Visio was their diagramming software, not IntelliCAD. The Visio Corporation retained ownership of IntelliCAD, and set up an organization called the IntelliCAD Technology Consortium (ITC) to continue development of the software. Today according to the ITC website there are seven fulltime programmers working on IntelliCAD. The ITC licenses the source code for commercial use to its members via an "Open Source" agreement. The ITC website can be found at [www.intellicad.org](http://www.intellicad.org). The company Cadopia, a member of the ITC, sells two version of IntelliCAD 2001, a professional and standard versions. For my review I took their standard version for a test drive.

### Free Trial

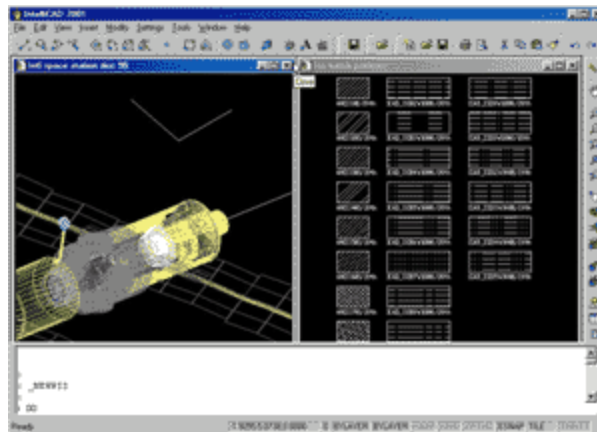
The free trial of IntelliCAD 2001 can be downloaded at: <http://www.cadopia.com/products/download.asp>. The download procedure is a little confusing, but if you look at item 4 on the download page you'll see the link. If you click on the hyperlink the download process will begin. In short, the other information on this page says that there is a minor bug in the installation and to ignore the errors that are going to popup at the end of the setup. I ignored the errors, rebooted my machine and the program worked fine. Cadopia has implemented a fantastic idea basing the demo duration on the number of times you start the program instead of by date. I don't know how many times I've downloaded a demo, installed it, and then went on to something else. Then a few months later when time was available attempted to resume my review only to have a dialog box popup that said, "TIME HAS RUN OUT." The 1000 executions allotted should be more than adequate for you or your company to review the software.

### Interface

IntelliCAD 2001 is a Windows based program that utilizes the Multiple Document Interface (MDI). This is same interface model that AutoCAD 2000 and AutoCAD LT 2000 now sports. In IntelliCAD you can share data between MDI windows by using the copy command and Windows clipboard commands cut and paste. IntelliCAD unlike recent versions of AutoCAD does not support dragging and dropping of objects (entities) between MDI windows.

The main window includes the standard Windows menu layout at the top, and an assortment of dockable toolbars that can be toggled on and off. The main window also includes a dockable

"Command Bar" for issuing commands by typing, and viewing program prompts similar to recent versions of AutoCAD. The "Command Bar" can be docked either at the top of the main window, just under the main menu or at the bottom of the main window.



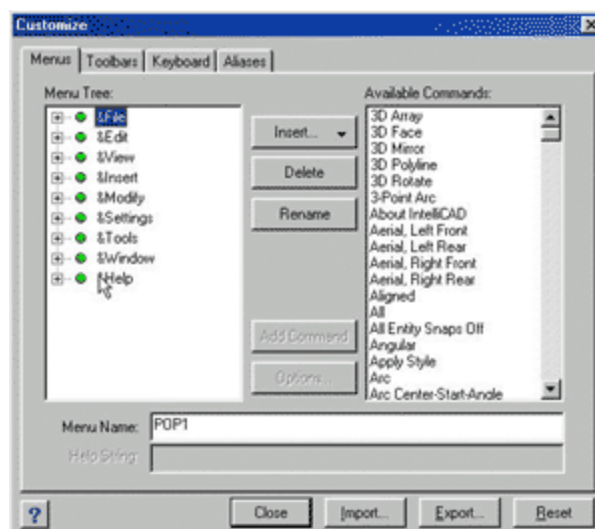
Program window showing two MDI windows with the "Command Bar" at the bottom

Unlike AutoCAD's command history window the "Command Bar" does not have the ability to resize and you cannot use Windows clipboard commands. Both of these features I use extensively in AutoCAD. In my work I do a lot measuring and analyzing of coordinate locations of objects. It's very efficient in AutoCAD to resize the command history window and then cut and paste previous data from the history into the command prompt. This process eliminates memorizing coordinates or writing them down on paper and then typing them in.

### IntelliCAD 2001 Continued...

One work around I found is that the "Command Bar" can be converted to a scrollable, resizable floating window by dragging it away from its docking site. This still does allow you to cut and paste data, but if the floating window is large enough to the see the historical data and the prompt then at least you don't have to write the data on paper.

The main menu, toolbars, shortcut keys, and aliases can all be customized via the "Customize" dialog box. To get to this dialog box select Tools>Customize from the main menu. With aid of this dialog box it's simple to add short cut keys, and create your own aliases for issuing commands into the "Command Bar." You can even add and delete menus and submenus as desired.

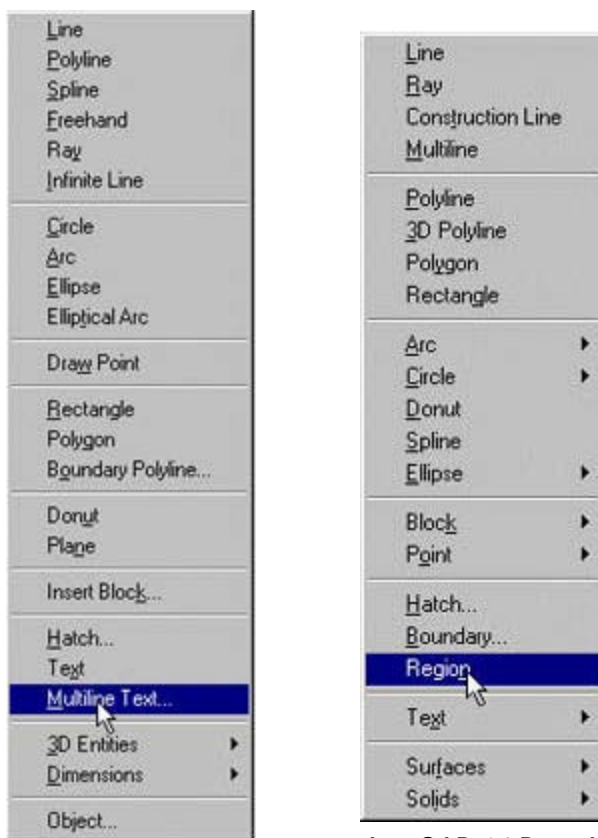


Customize Dialog Box showing the Menu Configuration Tab

## Features

The program supports the primitives that you would expect from a CAD package. There are lines, polylines, splines, circles, arcs, donuts, polygon meshes, extruded surfaces, text and multi-line text. In fact if you compare the AutoCAD 14 Draw menu items with IntelliCAD's Insert menu items they are very similar. The program also supports TrueType fonts, wide range of snap options, and reference files with clipping.

Unlike AutoCAD's command history window the "Command Bar" does not have the ability to resize and you cannot use Windows clipboard commands. Both of these features I use extensively in AutoCAD. In my work I do a lot measuring and analyzing of coordinate locations of objects. It's very efficient in AutoCAD to resize the command history window and then cut and paste previous data from the history into the command prompt. This process eliminates memorizing coordinates or writing them down on paper and then typing them in.

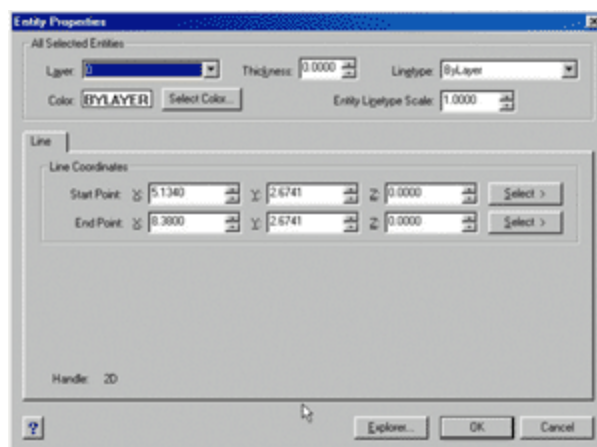


*IntelliCAD Insert Menu Items*

*AutoCAD 14 Draw Menu Items*

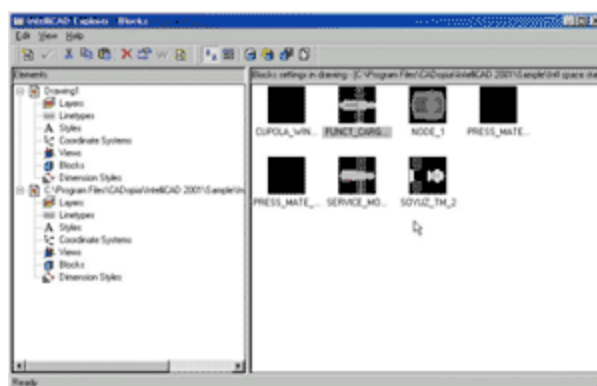
## IntelliCAD 2001 Continued...

Editing entities is very easy in IntelliCAD. By right clicking on an entity and then selecting "properties" from the popup menu a property dialog box appears. For example, a line's properties such as color, begin and end points, layer, and line type can be easily changed. This feature is similar to the way recent versions of AutoCAD handle properties. It's interesting to note that this object-oriented approach was introduced in Visio's diagramming products and then in the release of IntelliCAD 98. It wasn't included in AutoCAD until the 2000 release.



*Entity Property Dialog Box showing the properties of a line*

The program has an interesting feature called IntelliCAD Explorer which can be found by selecting Tools>IntelliCAD Explorer from the main menu. The Explorer Dialog Box allows users to easily add, delete, and edit drawing layers, font styles, line types, views, blocks, and dimension styles of any drawing that open. This is an excellent feature for familiarizing yourself with drawings created by others.



*IntelliCAD Explorer with two drawing open and showing the blocks for one of the drawings*

Custom programs can be written for IntelliCAD by using LISP, and Development System™ (SDS). The program can run AutoLisp routines without modification. In order to use AutoCAD ADS programs the C and/or C++ code will have to be recompiled using the IntelliCAD SDS run-time libraries. One note, the Professional version of IntelliCAD includes support for VBA. These programming features give IntelliCAD a great advantage over AutoCAD LT, which does not support any programming features. Even non-programmer can benefit from these programming features because third party software companies create engineering add-ons using these tools. One such company that I'm familiar with is Eagle Point that has highway and structural design software that works within IntelliCAD.

## **IntelliCAD 2001 Continued...**

IntelliCAD also includes a Script Recorder that records anything you type on the keyboard into an AutoCAD compatible script file (extension of scr). Recording scripts is a simple way to create macros without resorting to programming in VBA.

## **File Compatibility with AutoCAD 2000**

For most of us compatibility with AutoCAD, the industry leader, is of utmost importance. Your clients may demand drawings to be done in AutoCAD or maybe you're an engineer that shares work

internally with CAD professionals. Whatever the reasons I bet AutoCAD file compatibility is most likely at the top of your list of required features. Here's what Cadopia has to say about file compatibility in their documentation:

"IntelliCAD's native file format is .DWG. It allows you to open and save any existing Autodesk AutoCAD file (V2.5 through 2000) and there is no file conversion or data loss."

Reading this passage I was led to believe that IntelliCAD 2001 is 100% compatible with AutoCAD 2000. I went to the AutoDesk website and from their marketing material I selected one upgrade feature of AutoCAD 2000 to test. I selected "lineweights" because this would be an attribute that would impact the final "look" of a drawing. Guess what? IntelliCAD 2001 doesn't support this feature. What IntelliCAD does do is when you open and then save to the AutoCAD 2000 file format, it retains the lineweight information, but it has no way of implementing the feature. Was the IntelliCAD documentation correct? Well, I guess it was--there was no data loss.

## What Else is Missing

In comparing AutoCAD 2000 to IntelliCAD 2001 there are two obvious things that are missing. One is IntelliCAD does not support the new AutoCAD feature called Layouts. Layouts allow the user to create multiple paperspace arrangements in a single drawing. This feature saves time and effort in plotting project files. The second and probably the most important area that IntelliCAD has failed to adopt are Internet features.

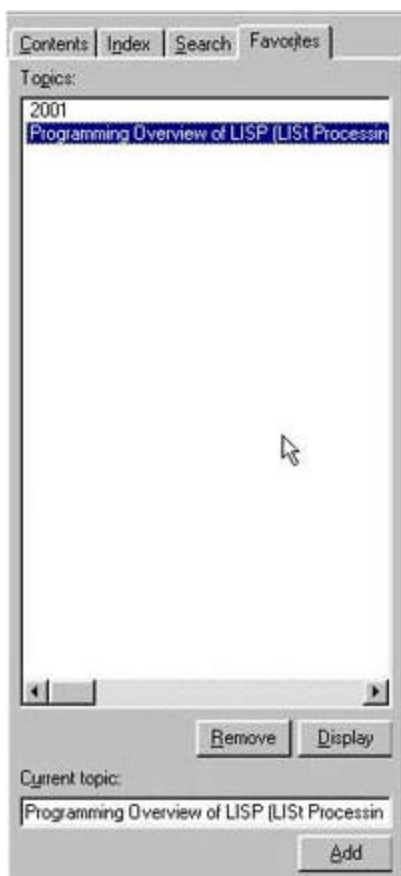
With more and more companies turning to the Internet for communication and collaboration it's amazing that IntelliCAD doesn't support any Internet file formats. AutoCAD, for example, has a built in web browser, allows hyperlinking to objects, and exports to the Drawing Web Format (DWF) for dynamically viewing AutoCAD drawings on the web. At a minimum I would have expected IntelliCAD to export to a gif or jpg file format so that a drawing's representation can be embedded into an HTML file for Internet viewing. This type export feature is found in most of today's graphics programs such as Microsoft's Visio and TurboCAD 7.0--just to name a few.

## Getting Help

Like all Windows programs IntelliCAD has an online help facility. It has your standard features such as an index, table contents and search, but it also includes an area to save help topics that you reference frequently. I usually don't get too excited about help facilities but this feature is a great idea.

## IntelliCAD 2001 *Continued...*

*Favorites Tab of the help system allows users to store help topics for easy access*



The documentation is well written and includes lots of graphics, icons, and screen shots to explain the workings of the program and CAD concepts such as coordinate systems. There are a couple of items that the documentation is missing. There should be a section on new features and major bug fixes that have been incorporated since the last release. Isn't it important to know what changes have been made since the last upgrade before you fork over your cash? Also, there should be some description of how to deal with AutoCAD 2000 files. I think it's unreasonable for a software company to expect the users to discover this by experimenting, especially a company that is marketing their product as having "Unparalleled DWG compatibility."

According to the Cadopia website, program support costs start at \$99 per quarter. The website was not clear how the support was handled but it did mention that it was open "24 hours a day, around the globe via Internet." They also have an Internet forum setup on their website. I took a peek into their general topics area and found it to be quite active. In a three day period there were over 100 entries. The forum was in three languages, English, Spanish and Portuguese.

## Conclusion

IntelliCAD 2001 is an interesting CAD program for the cost conscience. It's very easy to learn especially if you're familiar with AutoCAD. Looking at the ITC's bug list, perusing the Cadopia forums, and testing the software it's obvious that there are some "rough edges" to this program. If you're like me and you use CAD mostly as a measuring tool and a means to communicate your design intent to CAD professionals then this program maybe a viable alternative to the more expensive packages. My suggestion for the more demanding CAD users is to give it a test drive, it will surprise you how close this is to the "real thing"; and just might meet your needs. One final word of advice, if you need software that's 100% compatible with AutoCAD 2000 or 2002 buy AutoCAD.

## System Requirements

- Microsoft Windows 2000, Windows Me, Windows 95/98, or Windows NT 4.0.
- Intel Pentium processor or greater (recommended).
- 64 MB of RAM or higher (recommended for better performance).
- 50 MB of free hard-disk space for a full installation.
- High bandwidth Internet connection (needed only for downloading the demo version and for technical support.).

## Costs

IntelliCAD 2001 Standard Edition (CD only) Price: \$129.00

IntelliCAD 2001 Standard Edition (Downloadable) Price: \$129.00

IntelliCAD 2001 Professional Edition (CD and Printed User Guide) Price: \$249.00

IntelliCAD 2001 Professional Edition (Downloadable) Price: \$189.00

George L. Rowe, P.E. is the owner of Bridge Automation a Bridge Consulting and Software Company in Loomis, California. George can be contacted at [rowe@bridgeautomation.com](mailto:rowe@bridgeautomation.com), or visit the Bridge Automation website at <http://www.bridgeautomation.com>.