



## OpenDWG Alliance Announces Planned Support of AutoCAD 2004; DWGdirect Libraries to be used for AutoCAD 2004

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PHOENIX, Apr 1, 2003 (BUSINESS WIRE) -- The OpenDWG(TM) Alliance, a non-profit industry consortium committed to promoting open industry-standard formats for the exchange of CAD data, today announced that it has been working to support the newly-released AutoCAD(R) 2004 drawing ("DWG") file format in its DWGdirect(TM) program libraries. Progress by the OpenDWG team in support of this has been slowed because of technical challenges introduced with the new DWG file format.

AutoCAD is a product of Autodesk, Incorporated (NSDQ: ADSK), and DWG is the principal proprietary file format used by AutoCAD.

AutoCAD 2004, which shipped to customers in March, uses a redesigned drawing file format. This new AutoCAD 2004 DWG is not backwards-compatible with earlier versions of DWG. The changes introduced in this version of DWG are more significant than any since AutoCAD R13 was shipped in 1994. Included among these changes are the addition of data encryption and compressed data.

"Autodesk was in a position where, in order to add new functionality, they had to modify the DWG file format," stated Evan Yares, president of OpenDWG. "We applaud them for moving forward - AutoCAD 2004 has some great new capabilities. However the inclusion of data encryption and compression schemes within the new file format has created serious challenges to DWG data interoperability."

The DWG file format is a de facto standard for CAD interoperability, in use throughout the world. Defined by Autodesk, it is supported, through OpenDWG, by over 300 commercial software developers, and well over 1,000 non-commercial, educational, and internal corporate developers. There are estimated to be more than three billion DWG files in existence.

The AutoCAD 2004 DWG file format incorporates changes which make it particularly difficult for third-party programs to read. Both the file and section headers are encrypted, but in different manners from each other. While OpenDWG has been able to determine the algorithm used for both, it has not been able to determine if the encryption keys used to scramble the data will remain static, will change in each point release of AutoCAD, or will ultimately be changed dynamically under program control.

Said Yares: "In this case, we actually went to Autodesk, and asked them for assistance. Despite some friendly conversations and the initial promise of assistance, they have so far declined to provide any information on their data encoding algorithms."

An additional difficulty in reading AutoCAD 2004 DWG files comes from compression of CAD objects. Rather than having a single compression type, each object type appears to have its own individual algorithm, with a large number of special cases. Object compression is controlled by a 32-bit flag, which provides for billions of possible permutations. OpenDWG has reverse-engineered the compression algorithms for some objects, but substantial work remains to be done.

"We are being very cautious about recommending AutoCAD 2004 in any project where long-term access to DWG data is critical," stated Yares. "Until we solve the underlying data encryption and compression problems with complete certainty, new DWG files could present ongoing problems for interoperability, compatibility and usability of legacy data."

The DWGdirect libraries have been under development for several years, and were designed to accommodate substantial changes to the DWG file format, while being easier to integrate and support than the older OpenDWG Toolkit and Viewkit libraries. The DWGdirect libraries are written in object-oriented C++, and have a well-structured and powerful API designed to meet the needs of professional software developers. The DWGdirect libraries are available now in a version supporting DWG files created by AutoCAD 2002 and earlier.

### About OpenDWG(TM) Alliance

Founded in 1988, the OpenDWG Alliance is a non-profit consortium committed to promoting open industry-standards for the exchange of CAD data. Its members include thousands of the largest and the smallest companies in the world. OpenDWG is a leading light in interoperability issues for the engineering software industry and its users..

For additional information about the OpenDWG Alliance, please call (602) 263-7666 or visit [www.opendwg.org](http://www.opendwg.org).

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OpenDWG  
Evan Yares, 602/263-7666  
[evan@opendwg.org](mailto:evan@opendwg.org)  
or  
Press Contact:  
Strategic Reach PR  
Ken Feitz, 303/487-7406  
[ken@strategicreachpr.com](mailto:ken@strategicreachpr.com)

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