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AUTODESK

For Immediate Release

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Autodesk Ships Cyberspace Developer Kit

C++ Toolset Provides Object-Oriented Framework for Virtual Reality Applications

SAUSALITO, Calif. -- February 22, 1993 -- Autodesk Inc.'s Multimedia Division today announced the availability of its Cyberspace Developer Kit (CDK), the complete toolset for 3D visualization and simulation. With its comprehensive set of C++ class libraries, the CDK enables developers to build practical, PC-based applications in which users interact with 3D worlds in real time. Such applications are commonly referred to as Virtual Reality (VR) applications.

Historically a market and technology leader in bringing professional visualization, animation and design software to the PC, Autodesk has been conducting VR research and development since 1988. In November 1988, Autodesk demonstrated the first PC-based VR system at the AUTOFACT industry trade show in Detroit.

"We at Autodesk view Virtual Reality as the logical next step in design automation, because it adds interactive 3D visualization and simulation capabilities to the drafting and design process," said Richard Dym, general manager of Autodesk's Multimedia Division. "Virtual Reality technology is critical to

3D Geometry--easy importing, exporting, creation and manipulation of 3D objects, including support for Autodesk 3D Studio® software and .DXF™ file formats

Physical Phenomena--facilitate realistic simulations by assigning objects and environments real physical properties, such as mass and density; apply forces such as gravity, friction and spring

Open Interface--extensible architecture that is easy to build on; transparent access to a variety of input and output devices

Beta site developers have found the CDK invaluable in generating applications. "The Cyberspace Developer Kit and its links to existing Autodesk products have enabled us to generate robust and diverse applications in a time frame 40 percent shorter than expected, and provide amazing performance as well," said Scott Redmond, president of RPI Advanced Technology Group, a San Francisco-based vendor of VR hardware and software.

MicronGreen, Inc., a Gainesville, Florida-based CAD software developer, last month announced the Virtual Environment NAVIGATOR™, a product built using the CDK. The result of a collaborative effort with the Institute for Simulation and Training and the University of Florida, the NAVIGATOR is a real-time tool for experiencing, altering and interacting with 3D models.

"The NAVIGATOR has benefited greatly from the classic open architecture of Autodesk's CDK libraries, which follow the tradition of AutoCAD software's integrated problem-solving solutions," said Millard Pate, president of MicronGreen. "The functionality available in the CDK is substantial, and the integration with AutoCAD and 3D Studio is one of its most important features. The CDK has made our product a very powerful tool for the end user."

Designed to produce applications for many fields and to be used in a variety of computing environments, the CDK is device-independent, supporting a large number of peripherals from head-mounted displays and glove devices to standard mice and monitors. The CDK also supports networked applications, which enable the sharing of virtual environments among multiple users.

Cyberspace Developer Kit
Autodesk Inc.

Case Study: RPI Advanced Technology Group

Since 1970, RPI Advanced Technology Group has been helping Fortune 200 and Government 50 clients find unique solutions to technology and management problems. The company will soon ship the Head Mount Sensory Interface (HMSI) Device™, an affordable head mount display they believe will significantly broaden the market for immersive personal simulations technology. RPI has used the Cyberspace Developer Kit (CDK) for several projects.

One project involved quality control software for testing RPI's HMSI. CDK substantially reduced the development time of the quality control software, which in turn enabled RPI to greatly reduce the time necessary to bring a quality HMSI to market.

A second project, a game implementation developed with CDK, was begun as a test project. RPI is now evaluating the viability of marketing this type of product.

A third project is a complete Computer-Aided Design (CAD) system for a specific market segment. RPI cannot discuss the system in depth yet, but the CDK-based application will work with AutoCAD and 3D Studio, and is designed to run in real time over 56-Kbps-phone lines for remote, interactive CAD development.

RPI has found that with CDK, hardware performance and configuration issues of the past are no longer a significant consideration for potential immersive visualization users. RPI has configured numerous systems that provide very good performance at reasonable price points by running CDK with standard hardware and software utilities.

RPI estimates that CDK has reduced their development time by approximately 40% -- a substantial savings. Scott Redmond, president of RPI, has found an another significant benefit. He says their programmers "can't wait to get to work in the morning to use the system."

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"CDK operation requires no expensive development system, and applications developed with it can be used with or without special input and output devices," said Ricki Frankel, product manager for