GKS-3D approved for development as ANSI standard

X3, the Accredited Standards Committee on Information Processing Systems, has approved a series of new projects to develop the 3D extensions to the Graphical Kernel System. Also approved for development were four programming language bindings of the GKS-3D.

"There is a need to define a staged progression of functionality from GKS to areas consistent with the original GKS target of application programming interface for computer graphics," said Peter Bono, chairman of the X3 Technical Committee, X3H3, which will handle the development work. "By establishing the staged progression of functionality, the industry is assured of orderly incorporation of advanced technology to the computer graphics field.

The four language bindings approved for standardization to GKS-3D are Ada, Fortran, Pascal and C. These same four language bindings are being standardized for GKS, Bono reported, adding that Fortran GKS is complete.

GKS was published as an ISO standard in August 1985 and as an ANSI standard in November 1985. "Now that GKS is complete, we're moving on to the extension," Bono said. To participate in the X3H3 committee's activities contact Bono at Graphic Software Systems, PO Box 648, Gales Ferry, CT 06335-0648.

Dataquest study analyzes 1985 semi market

The depressed semiconductor market had a severe impact on the world's major semiconductor suppliers in 1985, causing Texas Instruments to slip from its number one market share position, according to a Dataquest report which summarizes the 1985 worldwide semiconductor market.

Because of dramatic variation in regional sales, US companies suffered greater losses than their Japanese and European counterparts, the report from the California-based market research firm says. US sales were down 28 percent from their 1984 levels, while Japanese and European sales dropped approximately 2 percent. A company's geographic base largely determined the strength or weakness of company sales, the report says, because the bulk of a company's sales occurred in its home region.

It was that factor that apparently caused TI to lose market share in 1985, according to Gene Norrett, associate director of Dataquest's semiconductor group. In Dataquest's 1985 market share ranking of the top ten semiconductor companies worldwide, NEC moved into first place, Motorola retained its second-place position, and TI dropped to third. In descending order, the other firms making Dataquest's top 10 list are Hitachi, Toshiba, Philips/Signetics, Fujitsu, Intel, National, and Matsushita.

Overall, the total worldwide semiconductor market declined 16.4 percent in 1985, according to Dataquest, but the firm is predicting a 9 to 12 percent growth rate in 1986, and an even stronger market in 1987.

New department

Personal opinions become part of CG&A with this issue. You will notice the new department, "Guest Editorial," kicked off this month by Carl Machover of Carl Machover Associates, who speaks to the question, "Is computer graphics still an identifiable field or just a feature of many if not most computers?" The Guest Editorial department will be published whenever a member of the community has submitted a worthy editorial.

If you have an opinion that could influence, be instructive, or even cause controversy among those in the computer graphics community, you should submit it to CG&A Editor-in-Chief Lansing Hatfield, Lawrence Livermore National Laboratory, 7000 East Avenue, PO Box 5504, L-156, Livermore, CA 94550.

March 1986
A preview of Computer Graphics 86

The National Computer Graphics Assoc., sponsor of Computer Graphics 86, has begun to release details about the sessions, speakers, and contests for the May 11-15 conference and exposition to be held in Anaheim, California.

The 1986 Videogala, on May 13, will honor the winners of NCGA's first annual international Computer Animation Competition. Roy E. Disney of Walt Disney Studios will present the awards, which will recognize excellence in computer-generated film and video animation. Tickets for Videogala, which include dinner, are $45.

Shootouts focus on IBM PC graphics

NCGA will also continue the popular “Shootout” seminars, where senior representatives from rival companies take their products head-to-head, with on-line demonstrations and audience questioning. Very popular at Computer Graphics 85, these sessions can cut weeks or months off the time it takes to find and evaluate graphics software. John Squilla of Eastman Kodak will moderate both shootouts.

Shootout number one will focus on business graphics packages for the IBM PC. The packages represented will be Chart-master and Sign-master from Decision Resources, Microsoft Chart, Graphwriter from Graphic Communications, 35-mm Express from BPS, Keychart from Softkey, GSS-Chart from Graphic Software Systems, and Energraphics from Enertronics.

The second shootout will pit IBM PC drawing packages against each other to find the best package for flow charts, organizational charts, and other diagrams. Scheduled to compete are Graftix Partner from Brightbill-Roberts, Dr. Halo II from Media Cybernetics, Diagram-master from Decision Resources, Sound Presentations from Communications Dynamics, GEM Draw from Digital Research, and Freelance from Graphic Communications.

Computer graphics and the arts

Computer Graphics 86 will also recognize the growing impact of computers in the art world—30 people active in the field of computer art will be addressing the conference. Five days of tutorials and technical sessions will cover subjects ranging from the fundamentals of computer graphics to television/broadcast graphics, animation, and multi-image design.

Also included are panel discussions on such topics as aesthetic issues related to computer art forms and research in computing for the arts.

Chairing the Visual Arts and Design program is Joan Truckenbrod of the School of the Art Institute in Chicago.


Five days of tutorials and technical sessions will be complemented by a four-day exposition of computer graphics hardware, software, and services. More information and registration material are available from the NCGA, Department IN, 2722 Merrilee Dr., Ste. 200, Fairfax, VA 22031; (800) 225-NGCA.

Synercom signs on with NASA space center

Through a donation of software to Texas A&M University, Synercom has become a contributor to NASA's new Center for Commercial Development of Space in Jackson, Mississippi.

The objective of the Center is to establish a national focal point for the commercial development of space remote sensing.

In linking satellite images with the Synercom system, A&M can analyze remote imagery more effectively, view it in a different perspective, store and manage it in a central database, and overlay images in different combinations.

Graphics Interface 86 teams with Vision Interface 86 in Vancouver

Computer graphics and computer vision will be the themes of these companion conferences held in Vancouver, British Columbia, on Canada's West Coast Monday, May 26, through Friday, May 30, 1986.

Two days of tutorials (May 26 and 27) and three days of technical sessions (May 28 to 30) will feature 40 papers on computer graphics and 28 on computer vision.

Film and Video Show

There will be a Film and Video Show the evening of May 28. Submissions for the Film and Video Show should be sent to Severin Gaudet, School of Computing Science, Simon Fraser University, Burnaby, BC V5A 1S6, Canada; (604) 291-4370 before May 1, 1986.

Technical sessions

The three days of technical sessions will include sessions on Applications, Computer Graphics and AI, Display Algorithms, User Interfaces I, Vision/Graphics Interface, and Remote Sensing and Geo-Information Systems on Wednesday, May 28; Algorithms, Modeling I, Human Animation, Robotics, and Perception/Computational Vision on Thursday, May 29; and finally Modeling II, User Interface II, Hardware, Animation, Image Processing and Pattern Recognition, and more applications on Friday, May 30.

World's Fair, too

Since the joint conferences are being held in Vancouver during the Expo 86 World's Fair, early registration is advised. A block of accommodations has been reserved at the University of British Columbia, where the joint conferences are being held. For further information on the conferences contact Dr. Gunther Schrack, Dept. of Electrical Engineering, University of British Columbia, Vancouver, BC V6T 1W5, Canada; (604) 228-2326.
1985: A great year for PC-based CAD

Microcomputer-based CAD/CAM/CAE grew at an explosive rate in 1985, with more than 90,000 units shipped by the end of the third quarter, according to a recent report from Daratech. The reason is simple: Users find that PC-based CAD systems deliver 70 percent of the capability of larger systems at 20 percent of the cost. This trend is hurting sales of larger systems, particularly single-user systems in the $15,000 to $50,000 category.

"We'll remember 1985 as the year PC CAD entrenched itself in the CAD/CAM industry," said Eric Tehelchok, president of Graphics Systems, in Cambridge, Massachusetts. "The emergence of the true 32-bit micro, a major event in 1985, allowed the supermicro to make its challenge against traditional high-end systems."

Daratech reports that users are increasingly concerned about both the stability of the vendors they deal with and issues of compatibility and integration with existing data processing systems. Users apparently prefer to buy personal computer hardware independently or make use of computers that had been purchased for other purposes.

Autodesk continues to lead the field in PC-based CAD with its AutoCAD drafting and design system, and is currently shipping more than 2500 units per month. AutoCAD runs on 30 different models of personal computers. Daratech estimates that AutoCAD has about twice as many users as any other CAD system, a factor that has given Autodesk an influence on the market that is "altogether out of proportion to its revenues."

T&W Systems, which pioneered PC-based CAD in 1982 with CADAPPLE, is Autodesk's closest rival in the PC CAD business. It did well in 1985, with about 12,400 of its VersaCAD systems installed by the end of the third quarter.

IBM, firmly established as the overall CAD/CAM/CAE sales leader, has just released several single-user, standalone workstations, including one based on its Model 5080 intelligent graphics terminal. These systems are 32-bit, RISC-type machines in the one-to-four-MIPS class.

McDonnell Douglas is one of the few CAD/CAM/CAE vendors to report outstanding growth in 1985 and probably stands in fifth place now, according to Daratech. Its software has an open architecture and runs on three of the most popular computers and operating systems, using the particular data management component of each to facilitate integration.

In August 1985 McDonnell Douglas set up an autonomous business unit, PC Productivity Systems, to investigate, develop, and market PC-based software for CAD/CAM/CAE and other applications. The new company functions as an autonomous group and its products will be marketed through retail outlets.

"The company's initial target is the low-end, single-user system installation in engineering establishments with a need for advanced 3D mechanical design functionality," said Tom Rafferty, senior director of new ventures at McDonnell Douglas. The first product, scheduled for release in the first quarter of this year, is a CAD/CAM software package for use with the IBM PC family of computers and compatibles.

There are successful CAD/CAM/CAE vendors that are not following the PC trend. Intergraph is number two behind IBM and continues to enjoy outstanding user acceptance of systems based on 32-bit VAX computers and Intergraph's proprietary dual-screen graphics terminals. According to Daratech, PC-based systems do not figure prominently in Intergraph's plans.

Similarly, Control Data sees a growing acceptance of large, host-centered configurations for CAD/CAM/CAE by large companies because of their lower costs per seat, easier integration with software developed in-house, and the substantial amounts of computer power they can provide for engineering analysis.

Errata

Paragraph dropped from article

Due to a production error, a paragraph was dropped from an article in the January issue of IEEE CG&A. The article was by Nick England, "A Graphics System Architecture for Interactive-Specific Display Functions."

CG&A apologizes to the author and our readers for the mishap. The paragraph, which should have appeared at the bottom of the first column on page 66, reads as follows:

"Worth noting here is the fact that calculation of surface normals for these curved surfaces (and for polygonally defined surfaces) is carried out locally in microcode. From the normals, either vertex shade is calculated and interpolated across each polygon (Gouraud shading) or the normals are interpolated with shade calculation taking place at every pixel (Phong shading). Other graphics systems that provide Gouraud or Phong shading functions actually require that normals (or shades) for every vertex be calculated by the application program and not within the graphics device where the task logically belongs. Van Hook has included transparency and antialiasing by using additional portions of image memory to hold information about density and partial pixel coverage, respectively.

Missing line in review

Also in the January issue, a line was inadvertently dropped from a review by Ronald K. Dillion. CG&A regrets the error. The review should have read:


The IBM PC Enhancement Handbook is a catalog of a broad range of enhancement products marketed by Cyber Research, Inc. under their own brand names. While the handbook does have descriptions and definitions helpful to the computer novice in selecting enhancement hardware and software, most PC users would be better advised to read the product ads and reviews in one of the better PC magazines.