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Directory of  
Geometry Partner Solutions



## GEOMETRY PARTNER SOLUTIONS

### Applications for the Geometry Computers

#### MECHANICAL COMPUTER AIDED ENGINEERING

ADAMS	MECHANICAL DYNAMICS INC
ANSYS	SWANSON ANALYSIS SYSTEMS INC
ARCHITECH	PHOENIX ADVANCED SOFTWARE SYSTEMS
AUTOBOTS	AUTOSIMULATIONS, INC
AUTOGRAM	AUTOSIMULATIONS, INC
CAMAND	CAMAX SYSTEMS, INC
CIMPLEX	AUTOMATION TECHNOLOGY PRODUCTS
ICM-GMS	INTERACTIVE COMPUTER MODELLING
PATRAN	PDA ENGINEERING
SUPERCADS	TASVIR CORPORATION
UNICAD DD1	UNICAD, INC
UNICAD M/P/E	UNICAD, INC

#### VLSI DESIGN & LAYOUT

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VIVID	MICROELECTRONICS CENTER OF NORTH CAROLINA

#### GEOPHYSICAL

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SEISMIC LINE PROCESSOR	DYNAMIC GRAPHICS, INC
SIERRA GEOPHYSICS	SIERRA GEOPHYSICS

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FRODO	UNIV OF CALIF SAN DIEGO
GRID	UNIV OF CALIF SAN DIEGO
MMS	UNIV OF CALIF SAN DIEGO
MIDAS	UNIV OF CALIF SAN FRANCISCO

## GRAPHICS ARTS & ANIMATION

ALIAS/1	ALIAS RESEARCH CORP
COMPOSITE	ABEL IMAGE RESEARCH
DIRECT	ABEL IMAGE RESEARCH
IMAGE	WAVEFRONT TECHNOLOGIES, INC
MOVIE.BYU	BRIGHAM YOUNG UNIVERSITY
PICTURE	✓ ABEL IMAGE RESEARCH
PREVIEW	✓ WAVEFRONT TECHNOLOGIES, INC
RENDER	✓ ABEL IMAGE RESEARCH
REPLICORE	CREATIVE VISUAL SOFTWARE
VISTA	✓ NEO-VISUALS

## GENERAL GRAPHICS

BLOX	RUBEL SOFTWARE
CEEGEN-GKS	SILICON GRAPHICS
DATAVIEWS	VISUAL INTELLIGENCE CORP
DMASCENE	MERIT TECHNOLOGY, INC
IMAPS	MERIT TECHNOLOGY, INC
WHIP	G W HANNAWAY & ASSOCIATES

## UTILITIES & ENGINEERING SUPPORT

AIDE-DE-CAMP	SOFTWARE MAINTENANCE & DEVELOPMENT SYSTEMS, INC
EMACS	SILICON GRAPHICS
EXCL COMMONLISP	FRANZ, INC
FRANZ-LISP	FRANZ, INC
INFORMIX	RELATIONAL DATABASE SYSTEMS, INC
OBJECTIVE-C	PRODUCTIVITY PRODUCTS INTERNATIONAL
P-STAT	P-STAT, INC
Q-CALC	UNIPRESS SOFTWARE, INC
UNIPLEX II	UNIPRESS SOFTWARE, INC

## INTRODUCTION TO THE GEOMETRY PARTNERS DIRECTORY

This catalog has been provided as a convenience for our customers and prospects. This is not to be considered a definitive description of any application or product, but is intended as a guide to solutions available on the Silicon Graphics computer systems. For a comprehensive description of these applications, please contact the vendor directly or refer to their literature.

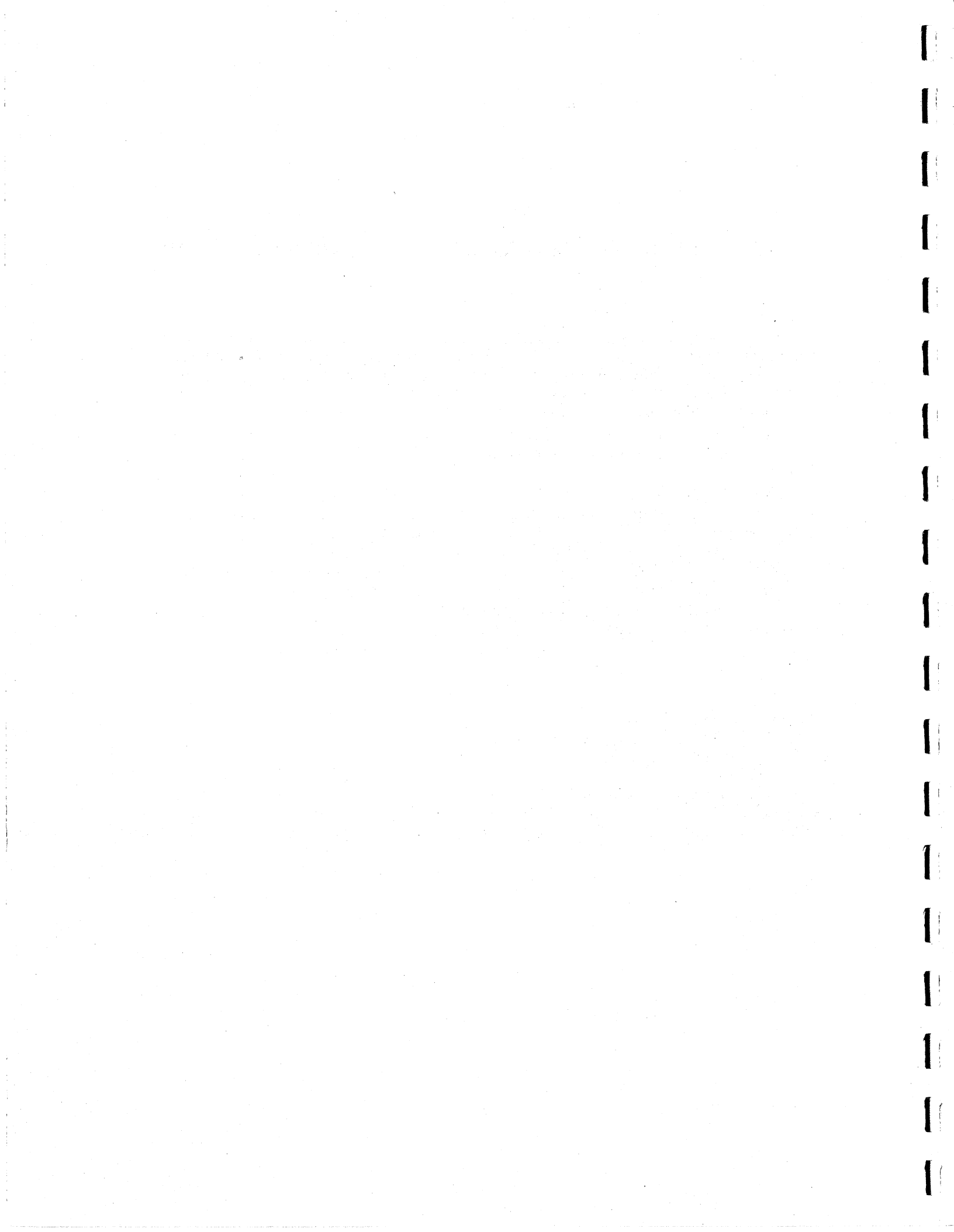
Each product has been catalogued by major software application usage area. However, many packages may find applicability in other areas or disciplines.

This directory represent those products currently available or committed at the time of printing. This catalog will be periodically updated with additional solutions. If you do not find the specific capabilities or applications you desire, please contact me for more current information.

Many vendor software catalogs will list any software which have been submitted. This directory only lists those applications from vendors who have entered into a contractual arrangement with Silicon Graphics to provide the finest, first quality applications to our users.

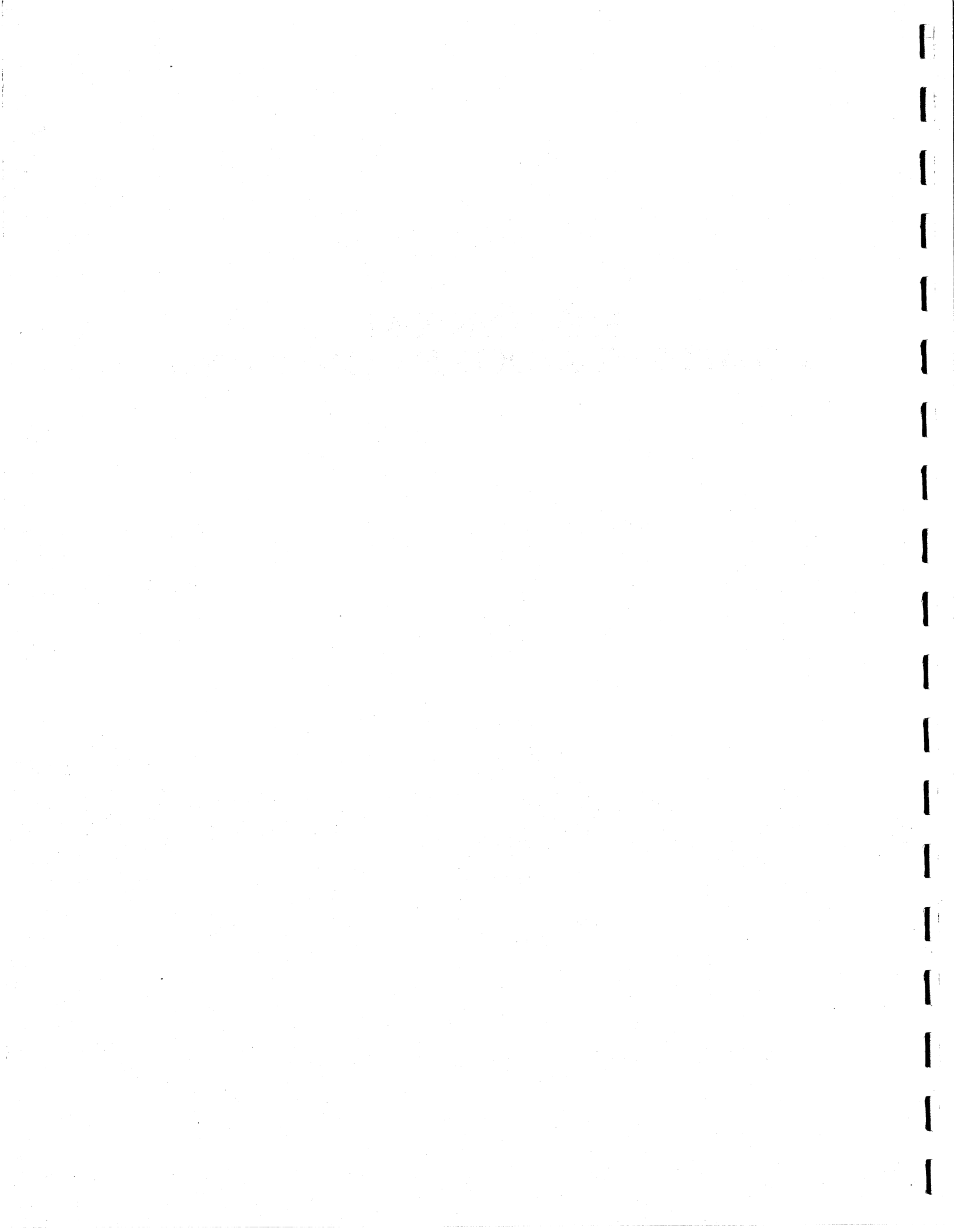
ROBERT G. PEARSON  
APPLICATIONS MARKETING MANAGER  
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2011 STIERLIN ROAD  
MOUNTAIN VIEW, CALIFORNIA 94043  
(415) 960-1980  
1/1/86





**MECHANICAL  
COMPUTER AIDED ENGINEERING**





# ADAMS

## DESCRIPTION

ADAMS from Mechanical Dynamics, Inc. is a three dimensional dynamics analysis system. It is used to study the most complex movements which occur in the real world. It is used extensively in the automotive and aerospace industries to study mechanical systems, kinematics, large deflections, and other motion requirements. Examples of systems which have been analyzed using ADAMS are: Automotive roll-over and lane change maneuvers, Automotive steering and suspension systems, Aircraft landing gear and flap control systems, Accident re-creations, Robot and workcell motions, and Complex machinery such as front-end loaders, fork-lifts, plows, etc. The output of ADAMS can be viewed as an animation sequence on the IRIS, allowing the user to fully understand what is actually occurring with the model. Future links with the Finite Element modeling and analysis world will expand the usage of this fine code. In addition to ADAMS, a 2 dimensional Kinematic Analysis System called DRAM is also available from MDI.

## IRIS PERFORMANCE INFORMATION

The IRIS is the only workstation which can fully execute the code and display the dynamic results. It will also be the only system able to do limited color shaded dynamics of ADAMS results.

## CONFIGURATION

ADAMS requires an IRIS workstation with the hardware floating point accelerator, 4 MB of memory, and at least 12 bitplanes for dynamic displays and analysis. The 2400 Turbo system is recommended.

## CONTACT

Gary Dawson  
Mechanical Dynamics, Inc.  
3055 Plymouth Road  
Ann Arbor, MI 48105  
(313) 994-3800



# ANSYS

## DESCRIPTION

ANSYS is a computer program which provides information about physical structures. ANSYS is a large scale, general purpose computer program for structural, electro-magnetic, and heat transfer analysis using the finite element method. The design engineer needs to know how a particular structure will react to a proposed load. He may need the temperature distribution and stresses in an aircraft turbofan engine blade during takeoff. He may need the dynamic characteristics of a suspension bridge. He may even need the electrical and magnetic fields surrounding a cryogenic coil. ANSYS provides accurate, complete information, essential to proper design decisions in thousands of applications. Modifications indicated by analysis results can be incorporated early as ANSYS can take data directly from many computer aided drafting systems. Extensive analytic capabilities, a thirteen year reputation for quality customer support, and unmatched ease of use have attracted ANSYS users from many industries, including nuclear, aerospace, transportation, packaging, medical, petrochemical, steel, plastic, electronics, farm equipment, communication, power, computer manufacturing, leisure/sports, civil construction, glass, and consumer products. The built-in ANSYS interactive graphics system makes structural analysis efficient and understandable. For many companies, ANSYS is an important part of computer aided design.

## IRIS PERFORMANCE INFORMATION

The entire ANSYS system will execute on the IRIS system. The ability to work with a complete 3-dimensional model interactively will improve performance for pre and post processing. Also the IRIS system can act as a terminal to interact with ANSYS if it is being executed on a remote host. This capability of the IRIS is unique among engineering workstations.

## CONFIGURATION

An IRIS 2400 Turbo with hardware floating point accelerator and 4 MB of main memory is required to run ANSYS.

## CONTACT

Sue Batt  
Swanson Analysis Systems, Inc.  
P.O.Box 65  
Johnson Road  
Houston, PA 15342  
(412) 563-6003

# ARCHITECH

## DESCRIPTION

ARCHITECH is a state-of-the-art Computer Aided Design (CAD) system created by Phoenix Advanced Software Systems for the Architectural, Engineering, and Construction industry. This three-dimensional drafting system is designed around the pin-bar method of overlay drafting. ARCHITECH works the way an architect does, unstructured, randomly, creatively. Absolutely no technical expertise is required. Instead, you design your project with an electronic stylus as you watch it take shape right on the computer's screen.

ARCHITECH is not a by product of a CAD system designed for another market but was created solely for the AEC industry to address its specialized requirements. Because of its speed and versatility, it provides more time to explore and produce design alternatives.

ARCHITECH can operate in conjunction with two other Phoenix systems: Looking Glass (3-D Surface Modeler), and ABACUS (Relational Object-Oriented Database Manager).

## IRIS PERFORMANCE INFORMATION

ARCHITECH utilizes the dynamic graphics functionality of the IRIS in 2D and 3D. The IRIS 2400 offers a powerful, cost effective drafting and design system when using ARCHITECH. The addition of Looking Glass allows complex Architecture planning drawings and artist renderings to be created quickly and accurately.

## CONFIGURATION

A standard IRIS 2400 is adequate to run ARCHITECH.

## CONTACT

Steve Moore  
Phoenix Advanced Software Systems  
201 Park Place, Suite 105  
Altamonte Springs, FL 32701  
(305) 767-8777



# AUTOBOTS

## DESCRIPTION

AutoBots is a robotic simulation software program that permits accurate determination of cycle times for robot activity during process operation.

The information derived by utilizing AutoBots can automatically be integrated into an AutoMod facility model. Users can independently program AutoBots to develop detailed work station models and designs.

One major benefit of AutoBots is its ability to provide quick, accurate and nearly optimum robot path plans.

AutoBots also provides a mapping algorithm for path planning in robot joint space. In this joint space, the robot is represented as a "point" while the workspace objects transform to new shapes. Planning a path simply requires you to graphically maneuver the robot "point" around the transformed workspace objects.

After AutoBots maps the workstation objects, you can plan path segments in seconds using straight lines, even in highly congested workspaces. The resulting robot paths use minimum joint accelerations and speeds, allowing you to invest in the least complex and least expensive machinery necessary for the job.

AutoBots also permits the simulation of coordinated activities using multiple robots.

## IRIS PERFORMANCE INFORMATION

AutoBots utilizes the dynamic 3D capabilities for displaying the motion of a robot work cycle. In addition, color shaded images of a work cell are available.

## CONFIGURATION

AutoBots will execute on any IRIS 2000 series workstations, including the IRIS 2400 Turbo. 4MB of memory and 12 bitplanes are needed.

## CONTACT

Richard Stapp  
AutoSimulations, Inc.  
522 West 100 North  
Bountiful, Utah 84010  
(801) 298-1398

# AUTOGRAM

## DESCRIPTION

AutoGram is a valuable tool for verifying system design by actual observation, the user can produce animated graphics of an operative planned facility and carefully monitor its operation.

AutoGram interfaces with AutoMod to create an entity status file. This is a digital description of the system created during each simulation time interval (usually one-tenth of a second) of operation. Each time a part of the system moves, performs an operation or changes status, that event is recorded on the entity status file. This status file and the predefined AutoGram entity definitions are then processed using the AutoGram software to produce the dynamic AutoGram display frame by frame.

The benefits of using AutoGram in simulation design and evaluation include reduction of model development time, enhanced capability of model validation by visually inspecting the system design and "seeing" the system operation, and as a training tool for management and employees.

Top management must approve a system before millions of dollars are invested in building it. AutoGram is a tool which can be used to present simulation results to management in a way which can be easily understood and with visual proof that a workable design exists.

## PERFORMANCE INFORMATION

AutoGram on the IRIS 2000 series workstations provides a fully dynamic real-time simulation of a viewable complex factory operation. The visual inspection of a process in operation provides a powerful check of an automation plan. Using the hardware of the IRIS, a user can zoom, pan or rotate within the factory to investigate detailed operations.

## CONFIGURATION

AutoGram executes on all IRIS 2000 Series workstations, including the IRIS 2400 Turbo. 4MB of memory and 12 bitplanes are recommended.

## CONTACT

Ricard Stapp  
AutoSimulations, Inc.  
522 West 100 North  
Bountiful, Utah 84010  
(801) 298-1398



# CAMAND

## DESCRIPTION

The CAMAND system from CAMAX System, Inc. provides three dimensional modeling features for design, analysis, documentation and numerical control programming of complex mechanical parts and tools. The standard software package, which is highly device independent, consists of a three dimensional modeler module, a drafting module, and a multi-axis (3-, 4- and 5-axis) CNC program generation module integrated with a database manager and system interface software. The system provides an interface to various host processor, graphics display and peripheral hardware devices. Optional software packages provide interfaces to other CAD/CAM system (IGES), digitizing systems and hardcopy devices. Post processors and various standard format outputs (APT-CL, BCL, CompactII) provide a wide range of interfaces to multi-axis machining equipment controls. Interfaces to plastic molding analysis packages are also available. The user interface utilizes dynamic on-screen menus, icons, prompts, command files and parameter readouts on color raster displays.

## IRIS PERFORMANCE INFORMATION

CAMAND utilizes the IRIS either as a terminal on various supermicro and minicomputer hosts or as a stand-alone workstation. The dynamic capabilities of the IRIS, along with its 3 dimensional display and color shading capabilities, make it ideal for the three dimensional model geometries and complex multi-axis numerical control cutter paths developed by CAMAND.

## CONFIGURATION

CAMAND is intended for use on the IRIS 2300, 2400 or 2400 Turbo. The specific configuration is dependent on customer application and performance requirements.

## CONTACT

David Arnoldy  
CAMAX Systems, Inc.  
7225 Ohms Lane  
Minneapolis, MN 55435  
(612) 831-0604

# CIMPLEX

## DESCRIPTION

CIMPLEX is a powerful software product for Computer-Integrated Manufacturing applications. CIMPLEX consists of four primary product components.

CIMPLEX-Faim is a control and information system which features configuration management, archiving and retrieval, change notification and verification, task scheduling and query facilities.

CIMPLEX-Design is a solid modeling system for mechanical parts and assemblies. CIMPLEX-Design is specifically designed to support downstream applications such as analysis and NC toolpath generation. CIMPLEX-Design features solids editing capabilities, double precision (64-bit) arithmetic, and a powerful panel-driven user interface.

CIMPLEX-Analysis consists of finite element and mechanism analysis tools for stress, thermal, kinematic and dynamic analysis. CIMPLEX-Analysis features automatic mesh generation of complex parts.

CIMPLEX-Manufacturing generates NC toolpaths on solid models created by CIMPLEX-Design. Rough stock removal and dynamic tool motion can be displayed.

## IRIS PERFORMANCE INFORMATION

CIMPLEX uses IRIS disk-based terminals and workstations connected to IBM 4300 computers. Model information is downloaded from the host for local operations such as 3D dynamics, curve and surface evaluation, hidden line/surface removal and shading. Data base operations are performed on the IBM host.

## CONFIGURATION

The basic system required is an IRIS 2300 Turbo with 2 MB of memory, 24 bitplanes, and the Geometry Link Communication option. An IBM host is also required.

## CONTACT

Jay Orlando  
Automation Technology Products  
1671 Dell Avenue  
Campbell, CA 95008  
(408) 370-4000

# ICM-GMS

## DESCRIPTION

ICM GMS is an interactive three-dimensional solid modelling and visualization system that allows its users to construct mathematical prototypes of design concepts. These prototypes are so real that they can be weighed (actually all mass properties are available) or sectioned, or tested for interferences, or have orthographic views constructed. Although the models are constructed as solid entities, visualization of the models can be wireframe, hidden surface, haloed line, perspective views or color shaded images.

The user interface consists of both a powerful keyboard command syntax, as well as on screen menus detected by a mouse. In two dimensions, there are six primitives and the ability to sketch any generalized polygon. In three dimensions, there are eleven primitives. In addition, two dimensional primitives and general polygons can be used in linear and rotational sweeps. These models can be arbitrarily combined through the boolean operations of union, intersection and subtraction.

ICM GMS employs a hybrid implementation of the constructive solid geometry and boundary representation techniques that combine the advantages of both and minimize their disadvantages.

The most important interfaces from this solid modeller are: Drafting (via IGES) and Finite element analysis (via ANSYS and PATRAN).

Macros or Procedures are probably the single most powerful feature of the system, allowing the user to evaluate both his own primitives, or a member of a family of parts with a one-line command.

## IRIS PERFORMANCE INFORMATION

ICM-GMS is able to fully utilize the local functionality of the IRIS for 3-D model manipulation, color shading and object manipulation. This provides a design workstation for CAE unmatched by any other combination of systems.

## CONFIGURATION

A standard IRIS 2400 configuration is required to run this application, but the software package can utilize the z-buffer and local rendering hardware of the IRIS if available. The IRIS 2400 Turbo offers as much as an 800% improvement in performance.

## CONTACT

Larry Barinka  
Iteractive Computer Modelling  
11800 Sunrise Valley Drive  
Suite 1535  
Reston, VA 22091  
(703) 476-1600

# PATRAN II

## DESCRIPTION

PATRAN II is an interactive approach to engineering analysis and modeling. It is a powerful solid and surface modeler that allows rapid definition of an engineering model. Automated finite element modeling capabilities are combined with this geometric approach to produce an accurate, easily verified analysis model.

PATRAN II can be used with built-in analysis capabilities, or you can interface directly to many leading analysis packages. Integral post-processing capabilities utilize the color graphics and imaging techniques of PATRAN II to permit evaluation of your analysis productively. The system is designed to give you a clear picture of three-dimensional behavior on your computer system at a very affordable price. PATRAN II actually consists of over 12 modules for geometry creation, mesh model generation, static, dynamic, thermal and composite analysis, post-processing animation, x-y plotting and others.

PATRAN II is a registered trademark of PDA ENGINEERING, Santa Ana, CA.

## IRIS PERFORMANCE INFORMATION

On the 2400 Turbo, PATRAN II will operate fully to provide an integrated CAE solution on a stand alone workstation. The combination of a powerful processor and full real-time 3D graphics provides an environment unexcelled for PATRAN II execution.

In addition, PATRAN II, using the power of the IRIS terminal to perform local zoom, pan, rotations and color fill, provides good response when the IRIS is used with any host. Since several compute-intensive operations are performed by the IRIS terminal, more users may be supported on the same host configuration.

## CONFIGURATION

PATRAN II can run in a stand alone environment on the 2400 Turbo workstation. A minimum of 4 MB of memory, hardware floating point and 12 bitplanes is needed. A full 32 bitplane system is recommended for maximum performance results. A dial & button is also recommended. PATRAN II will also support the IRIS 2000 series terminal product. The terminal may be connected to the host computer by ethernet (IRIS and VAX only) or by a serial line.

## CONTACT

Tony Glinskas  
PDA Engineering  
1560 Brookhollow Dr.  
Santa Ana, CA 92705  
(714) 556-2800

# SUPERCADS

## DESCRIPTION

SUPERCADS, is a three dimensional CADD system for the mechanical engineering, architecture and construction markets. Primitives supported are points, lines, conics, pointsets and planes. Operations include projection, sweeping, a range of editing capabilities, rotation, translation, mirroring and repetitive instantiation. A rich variety of manual dimensioning commands is provided, as well as a mode in which dimensioning is done automatically. SUPERCADS provides a multi-pen plotter interface, as well as user access to the CAD data. Data access facilities provided are text data extraction with sort/merge, report generation, query language reference to the model and interface to standard database products. This menu-driven product provides online help and a noun-verb syntax that users will find friendly and easy to learn. Because SUPERCADS' user interface is similar to that of Computervision's CADD54 system users trained on CADD54 will find SUPERCADS particularly easy to use!

## IRIS PERFORMANCE INFORMATION

The complete SUPERCADS program is supported on the IRIS workstations in a stand alone mode. Impressive dynamic performance is achieved by using the IRIS hardware for all viewing functions such as pan, zoom and rotate. From several hosts, the IRIS can work as a terminal to offload many operations.

## CONFIGURATION

This software is intended for use on the standard configuration IRIS workstations, primarily the IRIS 2400 Turbo. In addition the IRIS 2000 series terminals can be used with several host systems to provide a distributed environment.

## CONTACT

Paul Gulati  
Marketing Manager  
Tasvir Corporation  
1091 Stierlin Road  
Mountain View, CA 94043  
(415) 964-7000



# UNICAD DD1

## DESCRIPTION

The UNICAD DD1 drafting system is a modern approach to design and drafting. A full 3-Dimensional, robust, wire frame design capability is offered using an intuitive icon oriented user interface. Pop-up menus, formatted text input, toggle switch attribute setting, on-line calculator (using feature data), dynamic viewing and formatting, dynamic rubber banding, grid control, and stack oriented menu processing, all combine to offer a remarkably easy to learn and use system. Full plot arrangement, file management and symbol library management make this a complete system. Considering the features and performance of this package, it cost less than most other 3D drafting systems.

This product could be used by an engineer, designer, or draftsman in many industries and disciplines.

## IRIS PERFORMANCE INFORMATION

UNICAD DD1 utilizes the IRIS hardware zoom, pan, and rotation capabilities. The IRIS graphics hardware also improves the performance in most areas of the system, when compared to other bit-mapped systems.

## CONFIGURATION

UNICAD DD1 will run on the IRIS 2400, 2500 and 2400 Turbo. A minimum of 4MB of memory is required.

## CONTACT

Barbara Hoekelman  
Unicad, Inc.  
1695 38th St.  
Boulder, CO 80301  
(303) 443-6961

## UNICAD M/P/E

### DESCRIPTION

The UNICAD M/P/E system is a high-end mechanical design system with surface and solid modeling (optional) and includes the system building tools used to create the product. These tools (User Interface Management System-UIMS; Device Independent Graphics Support-DIGS; and Unibase, a CAD data management system that provides fast access to data and relational database management functionality) make the system highly modifiable, portable and extendable so that the user can create a custom designed system. This system would commonly be used by Mechanical Design and Analysis engineers. Companies which need a customized system, but do not have the resources to develop a capability from scratch will find the UNICAD product to be cost effective as well as productive.

### IRIS PERFORMANCE INFORMATION

All UNICAD M/P/E features will execute on the IRIS workstation, including dynamic rotation of 3D CAD models and surface shading. The IRIS provides an excellent platform for this integrated CAD system.

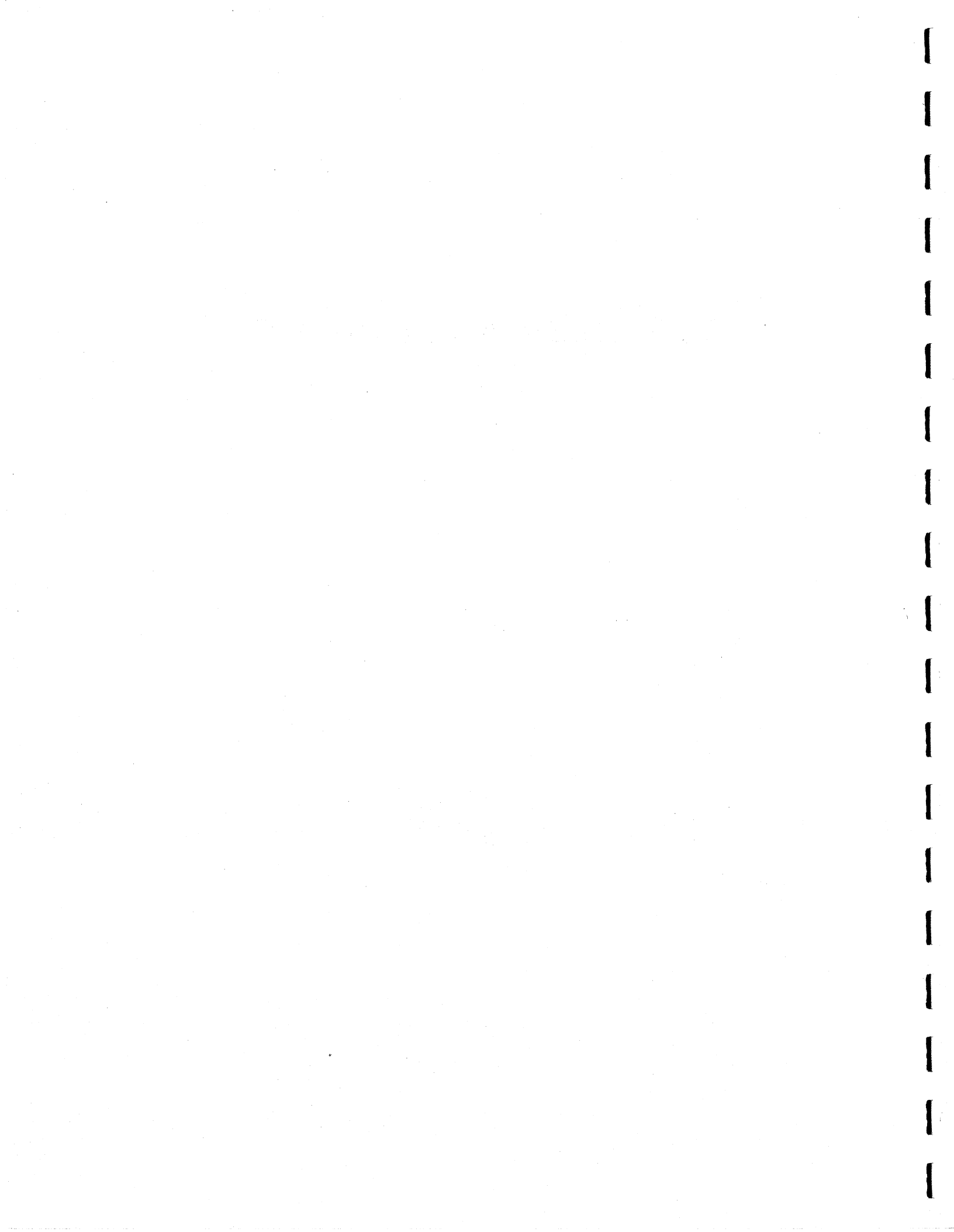
### CONFIGURATION

This software is intended for use on the IRIS 2400, 2400 Turbo and 2500, with 12 or more bit planes. 4MB of memory and hardware floating point are recommended.

### CONTACT

Barbara Hoekelman  
Unicad, Inc.  
1695 38th St.  
Boulder, CO 80301  
(303) 443-6961

# VLSI DESIGN & LAYOUT



# GEMstation

## DESCRIPTION

GEMstation is a high performance workstation for physical design of VLSI custom ICs. GEMstation consists of GEM layout editor and the optional MASKAP layout verification system. MASKAP is the industry-standard software package for design rule checking, schematic vs layout consistency check, layout electrical parameter extraction and MASK pattern generation. By fully utilizing the IRIS graphic and computational capabilities, GEMstation provides unsurpassed performance for custom VLSI design.

## IRIS PERFORMANCE INFORMATION

GEMstation is the fastest VLSI design system available today. The GEM layout editor has been highly optimized to use the features and power of the IRIS graphics hardware. Even complex custom chips with over 100,000 devices can be zoomed, panned and modified in real-time.

## CONFIGURATION

GEMstation will provide full functionality on a 2MB IRIS 2400 Turbo system with 12 bitplanes. However, for maximum performance with MASKAP on large designs, 4MB memory and additional storage is recommended.

## CONTACT

Ray Chafin  
Product Marketing Manager  
Phoenix Data Systems  
2425 Garcia Ave  
Mt. View, CA 94043  
(415) 965-7300

# VIVID

## DESCRIPTION

VIVID is a symbolic-level custom VLSI design system. The designer selects graphical representations of circuit elements from a collection of element attribute menus and places them on a "virtual" or "loose placement" design grid. Element type, position, attribute, property and connectivity information is captured in a hardware description language for future mask layout generation. The symbolic layout editor provides automated wire routing, contact insertion, and a hierarchical floorplanner.

Circuit property information is provided by a fast circuit simulator, which works directly from symbolic layout for quick debugging of designs. Oscilloscope-like wave form patterns are displayed on the graphics screen or output to a pen plotter.

A compaction process automatically translates symbolic layout to mask lay-out. A tool to accomplish pad/cell connections and other final chip assembly tasks is provided. Standard layout rules for the MOS technologies, contain a master technology file system and guide the automatic production of specific technology mask designs.

Mask description can be translated into CIF, CEASAR, or CALMA GDS II Stream Format. Documentation is provided so that additional languages may be added to the system's mask language translation program.

VIVID also supports interactive viewing of mask-level design layouts, produces plotter hardcopy, and performs final chip assembly tasks, such as pad routing, placement and I/O pad frame generation.

## IRIS PERFORMANCE INFORMATION

All functions of VIVID will execute on the IRIS workstation and are fully supported by the vendor.

## CONFIGURATION

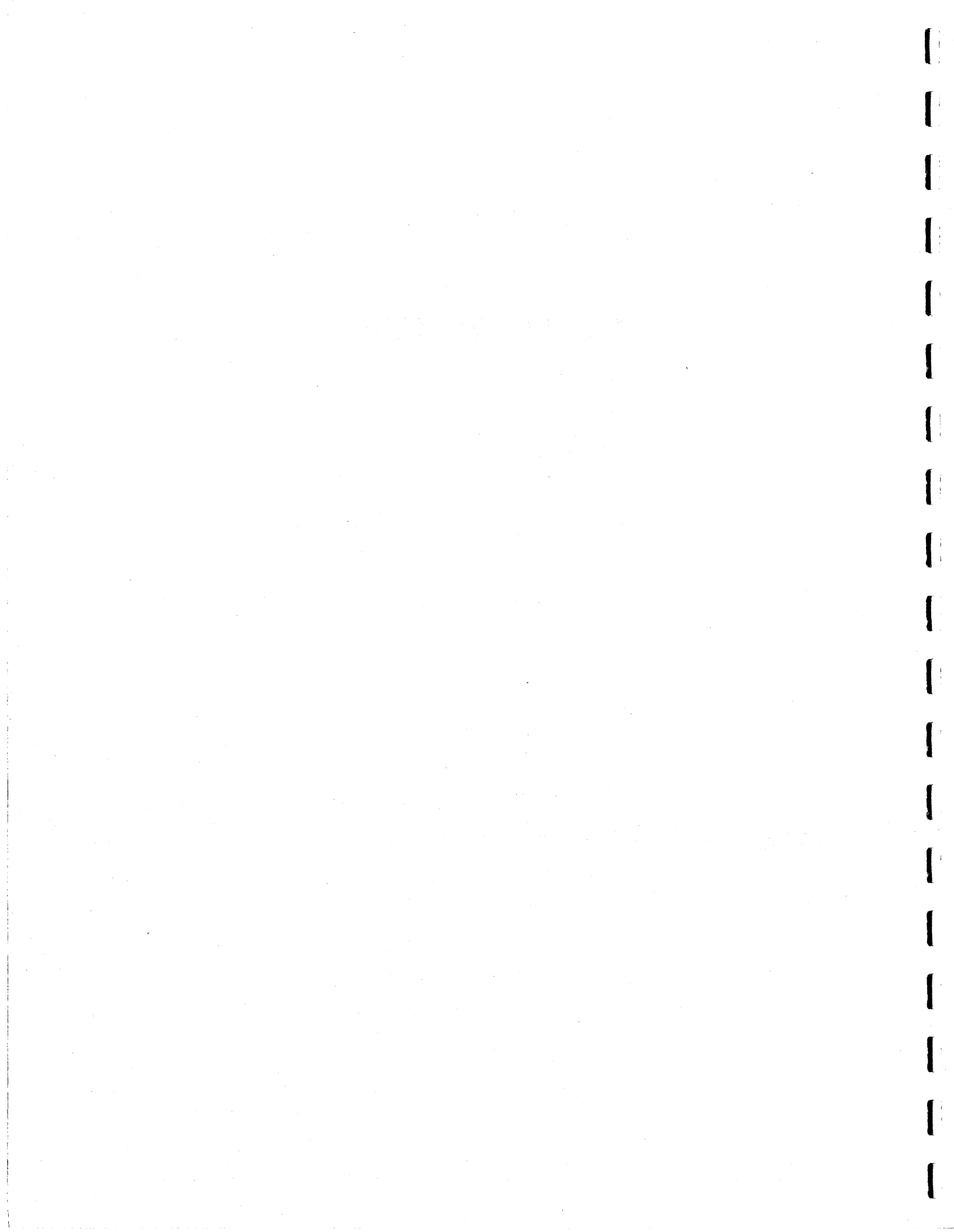
A standard IRIS 2400 with 10 bitplanes is required.

## CONTACT

Jay Rouse  
Marketing Consultant  
Microelectronics Center of North Carolina  
PO Box 12889  
Research Triangle Park, NC 27709  
(919) 248-1977



# **GEOPHYSICAL**



# INTERACTIVE SURFACE MODELING

## DESCRIPTION

The Interactive Surface Modeling (ISM) system enables a geophysicist to accurately map, display, measure and communicate accurate information about important surface relationships. This software solves real-world problems in geophysical and geological exploration application with the aid of computer graphics. The ISM program features straight forward, logical dialogue using standard industry terminology. Minimum training enables either technical or non-technical staff to perform grid modeling operations, produce draftsman quality contour maps, cross sections, fence diagrams, and perspective views. The process is self-guided and allows interactive editing on-screen to accommodate data changes. ISM accepts a wide variety of data including: contour lines, vertical and normal non-vertical faults, foreign grids, and scattered data. ISM produces base maps; contour maps; geologic block, fence and cross section diagrams; and volumetric calculations with reports. Grid functions include Industry-accepted surface interpolation technology; normal, non-vertical faults; and trend surface calculations.

## IRIS PERFORMANCE INFORMATION

ISM uses the 3-Dimensional graphics and computational power of the IRIS 2400 Turbo to deliver a fully stand alone interpretation workstation. 3D rotations of gridded surfaces, z-buffered color shaded perspective views and dynamic zooming capabilities are supported for the first time for surface mapping applications.

## CONFIGURATION

ISM requires a 12 bitplane IRIS 2400 Turbo with FPA and 4MB of memory. A digitizer tablet is desirable.

## CONTACT

Art Paradis  
President  
Dynamic Graphics, Inc.  
2855 Telegraph Ave, Suite 405  
Berkeley, CA 94705  
(415) 845-8180

# SEISMIC LINE PROCESSOR

## DESCRIPTION

The Seismic Line Processor (SLP) provides digitizing, automated data capture and calculations drawn from seismic line and cross-section sources. This is a surface modeling tool which allows detailed investigation, interpretation and evaluation of geophysical data. SLP uses highly refined mathematics, and is field-proven in demanding geophysical applications. Through the use of vertical and normal, non-vertical faults, the program offers excellent representation of real-life situations. The raw input data for the SLP program is normally digitized horizons from the set of interpreted seismic cross sections. The output from SLP is compatible with the Interactive Surface Modeling program to produce immediately usable results.

## IRIS PERFORMANCE INFORMATION

The SLP program can be used interactively in a stand alone manner on an IRIS 2400 Turbo workstation. A large digitizer tablet can be interfaced to the IRIS to provide a complete system. Once data has been entered, the graphics power of the IRIS can be used to provide interactive verification of the accuracy of the data.

## CONFIGURATION

An IRIS 2400 Turbo with 4MB of memory, FPA and 12 bitplanes is required. A large tablet is recommended.

## CONTACT

Art Paradis  
President  
Dynamic Graphics, Inc.  
2855 Telegraph Ave, Suite 405  
Berkeley, CA 94705  
(415) 845-8180

# SIERRA GEOPHYSICS

## DESCRIPTION

Sierra Geophysics offers a suite of products for geophysical modeling and analysis targeted towards the exploration of natural resource. These products provide a broad range of services, including geophysical modeling, verification and simulation of shot record results, vertical seismic profiling, seismogram synthesis from the geophysical computer model, seismic-data-driven map migration and viscoelastic modeling.

MIMIC helps the user create digital models of complex three dimensional geologic structures for seismic raytracing, gravity and potential field studies, exploration planning or reservoir calculations.

QUIKRAY uses normal incidence and image-ray ray tracing for simulation of seismic response of digital geologic models.

QUIKSHOT uses non-normal incidence raytracing to simulate shot record results from computer-based stacked geologic models.

QUIKVSP uses raytracing techniques to aid in the solution of borehole seismic problems by modeling and displaying vertical seismic profiles. Derived from a variety of input data, the results are applicable to vertical, slant and deviated wells.

SLIPR computes and displays synthetic seismograms from computer models of the sub-surface. These seismograms provide a powerful verification tool when compared to empirical data.

RAYMAP extrapolates shallow horizon models to greater depths using time map data and raytracing to model spatial reflection events. This provides a fully three dimensional map migration from multivalued and incomplete time maps.

VESPA models the viscoelastic behavior of geologic layers of arbitrary thickness and composition.

## IRIS PERFORMANCE INFORMATION

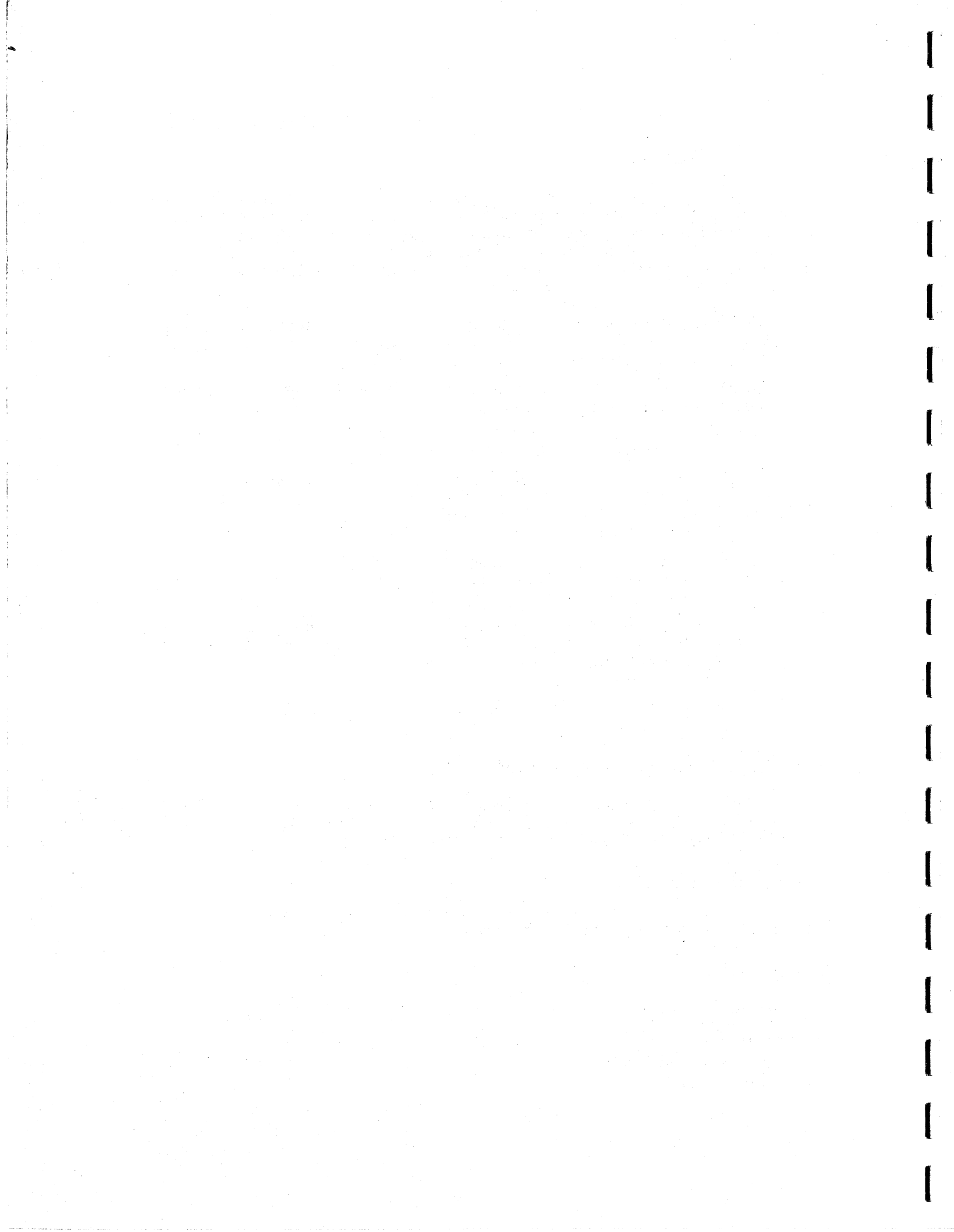
The IRIS 2000 series workstations provide a highly interactive platform for this set of applications. The utilization of the 3D hardware by the packages offers a new level of capability never before available.

## CONFIGURATION

This software is intended for use on the IRIS 2400, 2400 Turbo and 2500. Minimum configuration is 4MB with 12 bitplanes.

## CONTACT

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15446 Bell-Red Road  
Redmond, WA 98052  
(206) 881-8833





# MOLECULAR MODELING



# FRODO

## DESCRIPTION

FRODO is an interactive three-dimensional molecular modeling and refinement program which is used widely in chemical, pharmaceutical and biological research, and has gained a world-wide reputation for its flexibility and simplicity of use.

The program allows display of a background object, which is either a contoured representation of an electron density or energy map, or a skeletal representation of another protein molecule; and a foreground object, which is the molecular model to be manipulated. Bond rotations or movements of individual atoms or fragments of the structure may be performed in order to improve the interpretation of the map or to model potential interactions. One may rapidly obtain atom identification, and geometric data such as bond lengths and angles, distances and least-squares planes. If structure is disrupted, reasonable stereochemistry may be reimposed. All user interaction with the display is carried out using the mouse and an option menu, allowing simple and rapid interaction. Input of alphanumeric data is through a terminal keyboard. Although originally designed primarily for fitting electron density maps, FRODO has a number of features, for instance real-time monitoring of close contact approaches, which make it very useful in more general modeling studies.

## IRIS PERFORMANCE INFORMATION

For the first time, the IRIS combines a virtual memory 32 bit processor, multi-user operating system, and high performance three-dimensional interactive graphics hardware to create a powerful scientific computing workstation. Such a system is ideal for running complex interactive modeling programs such as FRODO, as well as the demanding scientific calculations which accompany the study of the structure and function of macromolecules.

## CONFIGURATION

An IRIS 2400 with 16 bitplanes (preferably 20) is required. An additional ASCII terminal is also strongly recommended. Hardware floating point will speed up some operations, but is not mandatory. FRODO will also work on IRIS 2400 Turbo systems.

## CONTACT

Dr. Stewart Oatley  
Department of Chemistry, B-017  
University of California, San Diego  
La Jolla, CA 92093  
(619) 452-6541; (619) 452-3037

# GRID

## DESCRIPTION

GRID is a program for detecting energetically favorable binding sites on molecules of known structure. It may be used to study individual molecules such as drugs; molecular arrays such as membranes or crystals; or macromolecules such as proteins. The energies are computed by studying the interaction of a probe group with the molecule, and can be displayed as three-dimensional contour surfaces by FRODO, together with the molecular structure.

GRID explicitly computes electrostatic, van der Waals and hydrogen-bonding effects, and allows for the local dielectric environment around each atom and each probe position. It therefore distinguishes between favored sites for different probes such as amino, amido, quaternary and heterocyclic nitrogen, and can thus throw light on structure-action relationships and the selectivity of drug-receptor interactions. There is no other procedure for detecting favored sites in this way and for assessing interaction energies.

GRID was written by Dr. Peter Goodford.

## IRIS PERFORMANCE INFORMATION

The GRID/FRODO combination takes full advantage of the computational power and high performance three-dimensional interactive graphics of the IRIS system to provide a self-contained molecular analysis and drug design workstation.

## CONFIGURATION

For the graphical display, the requirements are the same as FRODO. Hardware floating point will improve the speed of the program, but is not mandatory.

## CONTACT

Dr. Stewart Oatley  
Department of Chemistry, B-017  
University of California, San Diego  
La Jolla, CA 92093  
(619) 452-6541; (619) 452-3037

# UCSD MMS

## DESCRIPTION

The UCSD Molecular Modeling System (MMS) is a real-time, interactive, three-dimensional molecule display program. It was developed, and is undergoing continued enhancement, within the Department of Chemistry at the University of California at San Diego. The MMS represents molecules with line drawings, dot surfaces, and wireframe electron density contours.

The program is organized as a set of "tools", each of which performs a specific set of tasks. One is used to specify the set of models currently under the control of the program. Another is used to alter the view of the molecular system. Other tools currently available allow the user to edit the display, manipulate one set of models with respect to another, change colors, change dihedral angles, specify unit cell parameters, control the display of molecules related by crystallographic symmetry, and monitor interatomic distances. This organization allows users to quickly learn to use the MMS, since only those tools necessary for the task at hand need to be mastered. The introduction of specific new capabilities is enhanced because they are simply added on as new tools, without disturbing existing features.

## IRIS PERFORMANCE INFORMATION

The IRIS combines for the first time a virtual memory 32 bit processor, multi-user operating system, and high performance three-dimensional interactive graphics hardware to create a powerful scientific computing workstation. Such a system is capable of running complex interactive modeling programs such as MMS, as well as performing the demanding scientific calculations which accompany the study of the structure and function of macromolecules.

## CONFIGURATION

An IRIS 2400 with 16 bit planes is required. An ascii terminal is strongly recommended. Hardware floating point will speed up some operations, but is not mandatory.

## CONTACT

Steve Dempsey  
Department of Chemistry Computer Facility  
Department of Chemistry, B-014  
University of California, San Diego  
La Jolla, CA 92093  
(619) 452-4016

# MIDAS

## DESCRIPTION

MIDAS is a premier Molecular Modeling and design support system. It has been under development and enhancement at the Computer Graphics Lab of the University of California San Francisco for many years. This system has been used by major universities and research centers to assist in the design of new drug compounds and to analyze complex molecules. Accurate spatial coordinate data is maintained in the computer and is used to create and manipulate the viewable model in full three dimensions. MIDAS allows real-time display of color line and surface displays of several interacting molecules, while quantitatively monitoring the stereo chemistry. Although a complete model of the molecules is generated, it is possible to view any sub-segment in isolation for clarification. MIDAS is capable of full wire frame structure display with depth cueing, dot cloud and dot van der Waals surfaces and full shaded color surface and intersections display.

## IRIS PERFORMANCE INFORMATION

MIDAS on the IRIS is a fully self-contained design and analysis workstation allowing high performance display and real-time interaction with complex molecules. No other application or system offers the features, performance, or low price of the IRIS/MIDAS combination.

## CONFIGURATION

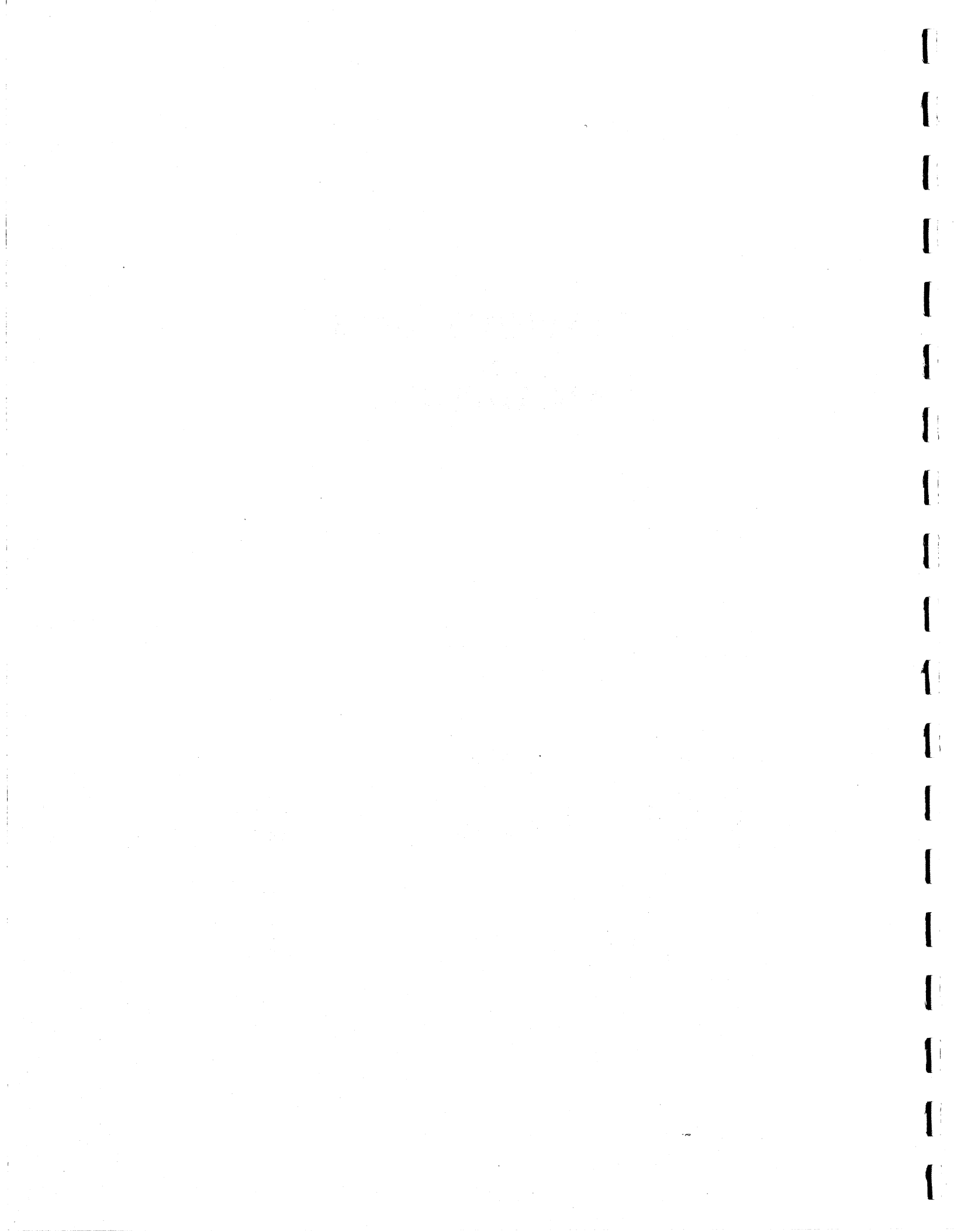
An IRIS 2400 with 12 bitplanes, 2 MB of main memory and hardware floating point acceleration is required. The IRIS 2400 Turbo is recommended.

## CONTACT

Dr. Robert Langridge  
Dept. of Pharmaceutical Chemistry  
Computer Graphics Lab  
University of California  
San Francisco, CA 94143  
(415) 666-2630



**GRAPHICS ARTS  
&  
ANIMATION**



# ALIAS/1

## DESCRIPTION

ALIAS/1 is a stand-alone, turnkey workstation designed to fit into any video production studio, printing shop, corporate communications facility or graphic house. It has the flexible functionality required by the graphics arts market. It performs a wide range of graphic arts procedures. Functions of ALIAS/1 include: The Paint System, the Graphics System, Interface, Real-time, Animation, Text, Business Graphics, Digitized Input and Output. The Graphics System consists of the Design and Object Modeling, Rendering and Advanced Graphics modules. The Design and Object Modeling module contains the capability to work with 2D and 3D B-splines interactively to dynamically generate complex sculpted surfaces and extruded shapes. Several 3D "solid" primitives are also available. The Rendering module contains optimized ray-casting software for producing realistic scene images with texture and transparency, anti-aliasing and enhanced shading and lighting options. The Advanced Graphics module adds reflecting and refracting functionality.

## IRIS PERFORMANCE INFORMATION

ALIAS/1 utilizes the 3D dynamic wireframe environment of the IRIS for 3D modeling and 3D animation. The raster capabilities are used for shading and rendered image display. The pixel speed has been improved via additional proprietary microcode to enhance the Paint system. The complete power of the IRIS 2400 Turbo can be used effectively to execute the complex scene rendering in a batch mode.

## CONFIGURATION

An IRIS 2400 with 4MB of memory and 12 bitplanes is the minimum system to be used. Additional memory, bitplanes and the IRIS 2400 Turbo can be added for additional performance and functionality.

## CONTACT

Steve Bingham  
Alias Research Corp  
111 Queen Street East  
Toronto, Ont. CANADA M5C 1S2  
(416) 362-9181

# COMPOSITE

## DESCRIPTION

The ABEL Image Research Software System is a high quality 3D animation system featuring 3D modeling; motion choreography; fully shaded, colored, lighted and textured renderings (with ray tracing features); and multi-plane compositing. Output is to videotape (3/4", 1", NTSC or PAL) or film (35mm or 70mm). The system can optionally accept CAD input and produce realistic moving images. The modules of PICTURE, DIRECT, RENDER and COMPOSITE provide a complete image creation system.

COMPOSITE combines any number of rendered images with background imagery to create composited scenes.

Features include zoom, pan, multi-plane and image windowing capability, Anti-aliased mattes generated by RENDER can be used, flexible color correction, dissolves, filters, transparency, intensity and color transformations are offered.

## IRIS PERFORMANCE INFORMATION

The system runs on the 2500 and 2500 Turbo. The faster systems are recommended. Data tablet input is required. The IRIS can also serve as a terminal to a mainframe host. Full modeling in 3-dimensions, interactive animation and 24 bit deep rendering can be performed on the IRIS workstation. Direct NTSC or PAL output is also supported.

## CONFIGURATION

A 24 bitplane system with 4 MB of main memory, at least 400 MB of disk storage, a hardware floating point accelerator and Dial and Button box is required.

## CONTACT

Steven Sidley  
Vice President, Products  
Abel Image Research  
953 N. Highland Avenue  
Hollywood, CA 90038  
(213) 462-8100

# DIRECT

## DESCRIPTION

The ABEL Image Research Software System is a high quality 3D animation system featuring 3D modeling; motion choreography; fully shaded, colored, lighted and textured renderings (with ray tracing features); and multi-plane compositing. Output is to videotape (3/4", 1", NTSC or PAL) or film (35mm or 70mm). The system can optionally accept CAD input and produce realistic moving images. The modules of PICTURE, DIRECT, RENDER and COMPOSITE provide a complete image creation system.

DIRECT designs and edits the motion of objects as well as choreographing camera movements. Large numbers of objects can be linked together hierarchically to produce jointed motion.

Features include interactive menu controls, adjustable camera, key frame motion definition, wire frame animation previewing, and flexible viewing options.

## IRIS PERFORMANCE INFORMATION

The system runs on the 2500 and 2500 Turbo. The faster systems are recommended. Data tablet input is required. The IRIS can also serve as a terminal to a mainframe host. Full modeling in 3-dimensions, interactive animation and 24 bit deep rendering can be performed on the IRIS workstation. Direct NTSC or PAL output is also supported.

## CONFIGURATION

A 24 bitplane system with 4 MB of main memory, at least 400 MB of disk storage, a hardware floating point accelerator and Dial and Button box is required.

## CONTACT

Steven Sidley  
Vice President, Products  
Abel Image Research  
953 N. Highland Avenue  
Hollywood, CA 90038  
(213) 462-8100

# IMAGE

## DESCRIPTION

WAVEFRONT IMAGE, realistic scene rendering software, is designed to produce a wide range of images from simple graphics to highly realistic renditions of three-dimensional scenes. Features include: Anti-aliasing, multiple light sources, material properties, color, roughness, texture and transparency mapping, shading with geometric smoothing, specular highlights, variable spatial resolution, and aspect ratio. IMAGE can interface to a wide variety of user-defined input devices.

## IRIS PERFORMANCE INFORMATION

The WAVEFRONT applications exploit the dynamic 3D hardware of the IRIS to provide a real time animation environment at a low cost. The IRIS 2400 Turbo can act as both an animation and a rendering station.

## CONFIGURATION

This application may be used on the IRIS 1400, 2400, 2400 Turbo and 2500. A minimum of 8 bit planes, disk storage of 40 MB minimum and a CPU memory of 2 MB is required. The hardware floating point unit and the 2400 Turbo are recommended to run the IMAGE program.

## CONTACT

Kathy Major  
Vice President, Marketing/Sales  
Wavefront Technologies, Inc.  
1421 State Street  
Santa Barbara, CA 93101  
(805) 962-8117

# MOVIE.BYU

## DESCRIPTION

The elements of the MOVIE system are Fortran programs for the display and manipulation of data representing mathematical, topological, or architectural models whose geometry may be described in terms of polygonal elements or contour line definitions. The source of the polygonal element data is often a finite element or finite difference analysis.

The programs of the MOVIE system work in harmony to: a) Provide perspective displays in line drawing and/or continuous tone image format. b) Clip and cap three dimensional finite element systems to expose internal surfaces. c) Modify geometry, displacement, and/or scalar function files by way of correction, differencing, appendage, or symmetry operation. d) Generate new models or title representations. e) Convert complex contour line definitions into polygonal element representations of the surface.

The following capabilities have been added to MOVIE.BYU: shadows, multiple light sources, transparency, dithering, anti-aliasing, fog simulation, solid modeling for bodies of revolution (including variations like gear teeth), surfaces of functions of three variables, curved clipping of solids, capability to create and access command files.

The system has been delivered to over 1300 organizations in 23 nations.

## IRIS PERFORMANCE INFORMATION

The complete MOVIE.BYU system can run very efficiently on the IRIS 2400 workstation. Development is under way to provide a full 3-Dimensional dynamic environment on the IRIS workstation. This version should be available in early 1986.

## CONFIGURATION

An IRIS 2400 with the hardware floating point option and 24 bitplanes is the recommended configuration.

## CONTACT

Dr. Bruce Nay  
Civil Engineering  
368 CB BYU  
Provo, Utah 84602  
(801) 378-2812



# PICTURE

## DESCRIPTION

The ABEL Image Research Software System is a high quality 3D animation system featuring 3D modeling; motion choreography; fully shaded, colored, lighted and textured renderings (with ray tracing features); and multi-plane compositing. Output is to videotape (3/4", 1", NTSC or PAL) or film (35mm or 70mm). The system can optionally accept CAD input and produce realistic moving images. The modules of PICTURE, DIRECT, RENDER and COMPOSITE provide a complete image creation system.

PICTURE streamlines the task of inputting three-dimensional objects from a variety of sources, including 2-D drawings, 3-D models, paint systems, video frame grabbers, and laser scanning devices.

Features include true three-dimensional polygonal modeling, curve splining, and the assignment of material and lighting properties.

## IRIS PERFORMANCE INFORMATION

The system runs on the 2500 and 2500 Turbo. The turbo is recommended. The IRIS can also serve as a terminal to a mainframe host. Full modeling in 3-dimensions, interactive animation and 24 bit deep rendering can be performed on the IRIS workstation. Direct NTSC or PAL output is also supported with PICTURE and the other modules from Abel Image Research, the IRIS workstation can provide a complete workstation based Graphics Arts and Animation System.

## CONFIGURATION

A 24 bitplane 2500 or 2400 Turbo with 4 MB of main memory, a hardware floating point accelerator, Dial and Button box and a data tablet is required.

## CONTACT

Steven Sidley  
Vice President, Products  
Abel Image Research  
953 N. Highland Avenue  
Hollywood, CA 90038  
(213) 462-8100

# PREVIEW

## DESCRIPTION

WAVEFONT PREVIEW software for creating, editing, storing and displaying 3D motion, provides interactive translation, rotation, scaling and other user defined motion. Features include: multiple viewports for viewing dynamic events, unlimited number of objects, cameras and light sources, extensive editing capabilities, 2D graphing of dynamic data and transformation hierarchies necessary for robotics and human motion applications.

MODEL provides full 3D object construction, 2D digitizing, tablet input and simple object editing. Features include 3D dynamic positioning and movement, tablet input of 3D shapes with multiple viewports and input/output of additional binary data files for ease of integrating other software.

## IRIS PERFORMANCE INFORMATION

The WAVEFRONT applications exploit the dynamic 3D hardware of the IRIS to provide a real time animation environment at a low cost.

## CONFIGURATION

This application may be used on the IRIS 1400, 2400, 2400 Turbo and 2500. A minimum of 8 bit planes, disk storage of 40 MB minimum and a CPU memory of 2 MB is required. A Dial and Button box and data tablet are recommended.

## CONTACT

Kathy Major  
Vice President, Marketing/Sales  
Wavefront Technolitics, Inc.  
1421 State Street  
Santa Barbara, CA 93101  
(805) 962-8117

# RENDER

## DESCRIPTION

The ABEL Image Research Software System is a high quality 3D animation system featuring 3D modeling; motion choreography; fully shaded, colored, lighted and textured renderings (with ray tracing features); and multi-plane compositing. Output is to videotape (3/4", 1", NTSC or PAL) or film (35mm or 70mm). The system can optionally accept CAD input and produce realistic moving images. The modules of PICTURE, DIRECT, RENDER and COMPOSITE provide a complete image creation system.

RENDER generates shaded raster images from object and motion descriptions created in PICTURE and DIRECT.

Features include lighting with multiple, moving, and direct light sources, anti-aliasing, diffuse and specular highlights and transparency, texture and reflection mapping, shadows, and multiple output formats (NTSC, PAL, or film).

## IRIS PERFORMANCE INFORMATION

The system runs on the 2500 and 2500 Turbo. The faster systems are recommended. Data tablet input is required. The IRIS can also serve as a terminal to a mainframe host. Full modeling in 3-dimensions, interactive animation and 24 bit deep rendering can be performed on the IRIS workstation. Direct NTSC or PAL output is also supported.

## CONFIGURATION

A 24 bitplane system with 4 MB of main memory, at least 400 MB of disk storage, a hardware floating point accelerator and Dial and Button box is required.

## CONTACT

Steven Sidley  
Vice President, Products  
Abel Image Research  
953 N. Highland Avenue  
Hollywood, CA 90038  
(213) 462-8100

# REPLICORE

## DESCRIPTION

REPLICORE is a dynamic 3D surface modeling package which takes advantage of most of the hardware features of the IRIS. REPLICORE was designed to be used by a non-programmer or a non-technical person and can be used after 2-4 hours of instruction. It is almost entirely menu-driven. It was also designed to be low cost, yet powerful enough to generate very sophisticated images in a short period of time. It is best used for conceptual design and animation. The data base is very complete. It stores vectors, polygons, vector and polygon connectivities, surface normals, colors and surface properties.

Object primitives have a great deal of flexibility which allows the user to stretch or convolute cross-sections, change resolution of surface, obtain angular slices and edit or modify the bodies. Spline and bezier surfaces can be fixed to the control points. Multi-slab can be used in an editing mode to form general free form sculptured surfaces. Body forms can be built interactively with a mouse and cursor or by typing in a data file. Model building takes place in a hierarchical fashion, so that models from Archive can be increased in complexity. Basic animation for displaying multiple bodies in pre-defined motion is included. Application packages, such as a color contouring module for displaying 3D field data, a graphics art package, a flow-field modeller, and neutral file interfaces will be available soon.

## IRIS PERFORMANCE INFORMATION

REPLICORE makes extensive use of the IRIS features such as the Geometry Engines for scaling, rotation, dragging and also the Z-buffer, Gouraud shading, depth cueing, clipping etc. These are closely integrated to the functional structure of REPLICORE.

## CONFIGURATION

The system runs on IRIS 2400, 2500 and the 2400 Turbo. A minimum of 2 MB, 32 bit planes, and the hardware floating point unit is recommended.

## CONTACT

Dr. Larry Cooper  
President  
Creative Visual Software  
1172 Ocaso Camino  
Fremont, CA 94538  
(415) 657-3705; (408) 997-1621

# VISTA

## DESCRIPTION

VISTA is a three-dimensional modeling and rendering system. It uses sophisticated geometric modeling and construction techniques to generate 3-dimensional faceted surfaces and objects. Both command and menu driven interactive interfaces are available, and in addition user programs can call the subroutines of the VISTA software directly. It is written in Fortran and is designed to be used by non-computer professionals. Models for complex scene rendering can be easily generated, and realistic images generated with little effort. For more complex problems, additional functionality is available for the sophisticated user.

## IRIS PERFORMANCE INFORMATION

The IRIS 2400 or 2400 Turbo provide a stand alone system capable of executing the entire VISTA software system. The IRIS is also supported as a terminal from a variety of host systems.

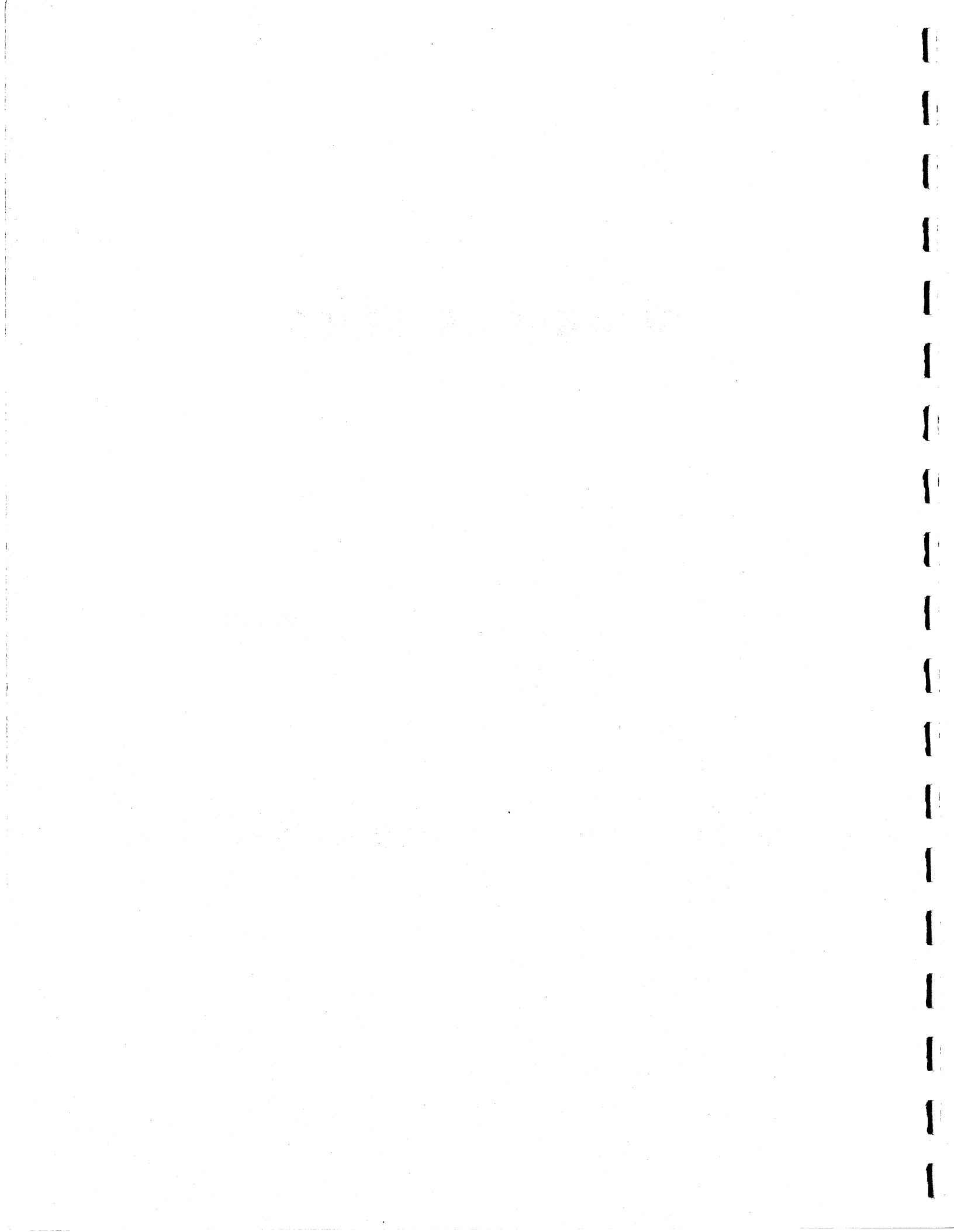
## CONFIGURATION

An IRIS 2400 with 4MB of memory and 24 bit planes is recommended. For complex scene rendering, an IRIS 2400 Turbo with FPA is recommended.

## CONTACT

Steve White  
Neo-Visuals  
201 Consumers Road, Suite 202  
Willowdale, Ontario Canada M2J 4G8  
(416) 491-8485

# GENERAL GRAPHICS



# BLOX

## DESCRIPTION

BLOX Graphics Builder is a graphics development environment for interactive graphics applications. Blox simplifies the design of application screens, menus and icons, thereby significantly reducing the time required to develop this user interface. BLOX users draw their interfaces with a mouse or other input device, rather than through programming them for days or weeks.

BLOX is a cross-industry product used wherever sophisticated, interactive graphics applications are developed.

## IRIS PERFORMANCE INFORMATION

BLOX will provide a fast user prototyping capability on the IRIS workstations.

## CONFIGURATION

A basic IRIS 1400 or 2400 with 12 bitplanes and a CPU memory of 2 MB is required.

## CONTACT

Eve Goldfarb  
Vice President/Sales  
Rubel Software  
215 First Street  
Cambridge, MA 02142  
(617) 876-7993



# CEEGEN-GKS

## DESCRIPTION

CEEGEN-GKS is a full implementation of the international standard Graphical Kernel System (GKS). This standard defines a uniform interface for user programs to graphics primitives. CEEGEN's product conforms to Version 7.2 of the GKS standard. It is written in the "C" language and will run on all UNIX release levels.

Output Primitives: Included are primitives for POLYLINE, POLY-MARKER, TEST, CELL ARRAY (Pixel Array) and FILL AREA. Generalized Drawing Primitives (GDP): Included are the GDP for circles and arcs, ellipses and elliptical arcs and Bezier curves. Segment Primitives: CEEGEN-GKS provides all the high-level primitives for segmentation. Attribute Binding: CEEGEN-GKS provides the full set of primitive attributes. Sophisticated Input Operations: The GKS standard defines six classes of input (LOCATOR, STROKE, STRING, CHOICE, VALUATOR and PICK) in one of three modes (REQUEST, SAMPLE or EVENT). The level 2B GKS as implemented by CEEGEN implements all six classes and REQUEST mode of input.

## IRIS PERFORMANCE INFORMATION

The speed of the IRIS workstation, coupled with CEEGEN-GKS, provides an unparalleled environment for developing or running GKS-based applications.

## CONFIGURATION

An IRIS 2400, 2400 Turbo or 2500 plus hardware floating point is all that is needed to run this application. No terminal support is provided. The CEEGEN-GKS package will run in the IRIS window manager.

## CONTACT

Robert G. Pearson  
Manager  
Applications Marketing  
Silicon Graphics, Inc.  
2011 Stierlin Road  
Mountain View, CA 94043  
(415) 960-1980

# DATAVIEWS

D.

## DESCRIPTION

DATAVIEWS is a graphics software system offering a unique set of graphics capabilities for a variety of engineering, science and industrial data display applications.

The system allows users to quickly and easily build graphics displays of dynamic and static data. The software provides more than 35 pre-defined graph types designed to meet a wide range of data exploration and display needs. A broad range of screen layout and display options allows users to efficiently customize their graphics. With the DV-Routines subroutine library, users may integrate DATAVIEWS' graphics functionality into their own hardware and software products. DV-Draw is a two-dimensional drawing editor which enable users to quickly and easily create static or dynamic drawings, such as schematics, instrument panels, and control systems, without programming.

## IRIS PERFORMANCE INFORMATION

The IRIS graphics allows more complex visual operations to be performed than on any other workstation. On an IRIS 2400 Turbo, the combined CPU and graphics performance offers a combination which can handle the most demanding real-time data display requirements. DATAVIEWS will continue to expand and utilize additional features of the IRIS Graphics system.

## CONFIGURATION

A basic IRIS 2400 is all that is needed to execute DATAVIEWS. It will also work on a basic IRIS 2400 Turbo.

## CONTACT

George Brand  
Visual Intelligence Corp. (VI)  
33 Boston Post Road West  
Marlboro, Mass. 01752  
~~(617) 485-6092~~

(413) 253-3482

# DMASCENE

## DESCRIPTION

DMAScene provides an out-the-window display of digital terrain data and movement through the terrain. DMAScene reads Defense Mapping Agency (DMA) Digital Terrain Elevation Data (DTED) or U.S. Geological Survey Digital Elevation Model (DEM) data. No preprocessing or data compression is required to read and download the terrain data. DMA Digital Feature Analysis Data (DFAD) can be read and displayed on the terrain also.

Movement through the terrain is controlled by the mouse or an interface to a simulation such as a six degree-of-freedom aircraft simulation. Hidden surface removal is accounted for so that feature data and other aircraft in the scene are not visible if they are not in the line-of-sight. The user has the ability to easily define the color pallet used for terrain shading. The user also has the ability to use a Heads-Up-Display.

DMAScene is a basic building block that Merit customizes to meet the individual's requirements. Interfaces to a simulation and the Heads-Up-Display are the types of functions that can be tailored to each user's specifications. DMAScene provides a low-cost, real time out-the-window simulation capability that utilizes real world digital terrain data.

## IRIS PERFORMANCE INFORMATION

DMAScene utilizes the power of the IRIS to graphically display DMA or USGS terrain data bases in an out-the-window view of the terrain and feature data. The terrain is color shaded and varies as a function of elevation. Movement through the terrain allows actual visualization of the digital terrain.

## CONFIGURATION

An IRIS 2400 or 2400 Turbo workstation with 12 bitplanes, 3MB of main memory, Z clipping, and a hardware floating point accelerator is required.

## CONTACT

Gary Karnavas  
Merit Technology, Inc.  
17770 Preston Road  
Dallas, Texas 75252  
(214) 248-2502

# IMAPS

## DESCRIPTION

IMAPS (Interactive Mission Analysis Planning Station) is a powerful graphics analysis and mission planning tool that can also be used to simulate a digital map display. IMAPS displays Defense Mapping Agency (DMA) Digital Terrain Elevation Data (DTED) or U.S. Geological Survey Digital Elevation Model (DEM) data as a plan view contour map.

As a mission planning tool, IMAPS allows the user to place waypoints and threats on the contour map interactively or from stored files. Intervisibility polygons for threats and the flight path over the terrain can also be displayed. The user can add, delete, move, change or store waypoint and/or threat information. As a digital map display, IMAPS provides two modes of operation. The first mode has a stationary icon representing the vehicle and the map moves under the icon. The second mode keeps the map stationary and moves the vehicle icon over the map.

IMAPS provides preflight, inflight, and postflight mission analysis capability. Merit customizes IMAPS to meet the individual's requirements.

## IRIS PERFORMANCE INFORMATION

IMAPS uses the graphics power of the IRIS to provide a low-cost graphical comparison ability in which real world digital terrain can be used for simulated displays or to evaluate avionics suites, expert systems, tactics, targeting options and mission planning techniques.

## CONFIGURATION

An IRIS 2400 or 2400 Turbo workstation with 12 bitplanes, 3MB of main memory, Z clipping, and a hardware floating point accelerator is required.

## CONTACT

Gary Karnavas  
Merit Technology, Inc.  
17770 Preston Road  
Dallas, Texas 75252  
(214) 248-2502

## WHIP

### DESCRIPTION

This package consists of over 75 programs for data acquisition, image processing and display using the IRIS workstations. The software supports standard RS-170 video acquisition, freezing, storing to IRIS disc, and image processing functions, using additional hardware installed inside the IRIS card cage. Video images may be acquired, stored, displayed in windows on the IRIS screen as well as on an additional frame buffer. Perspective views created on the IRIS display may be transferred back to the video frame buffer for display and recording. A complete spread of image processing functions is available including: View, Store, Memtest, Cursor, Hist, Gamma, Add, Subtract, Average, Mat and Replace.

GW Hannaway and Associates is in the business of taking full system responsibility for choice of optics, illumination, sensor, display, recorder, and other system components for image processing. Systems may be specified to include a pipeline video processor for realtime averaging and convolution, or a new systolic parallel processor for extreme performance in realtime. NASA, LANDSAT and DOD-Digital Elevation Map data may be read, displayed, enhanced and even transformed on the IRIS. Also supported are stereoscopic and tomographic reconstructions.

### IRIS PERFORMANCE INFORMATION

IRIS workstations are ideal as hosts for complete three dimensional image processing systems. Standard RS-170 input and output of video frames is possible because of the additional framestore hardware. The same hardware provides a "frame grab" digitizing capability for inputting video.

### CONFIGURATION

An IRIS 2400 system is all that is required to support the additional image processing hardware.

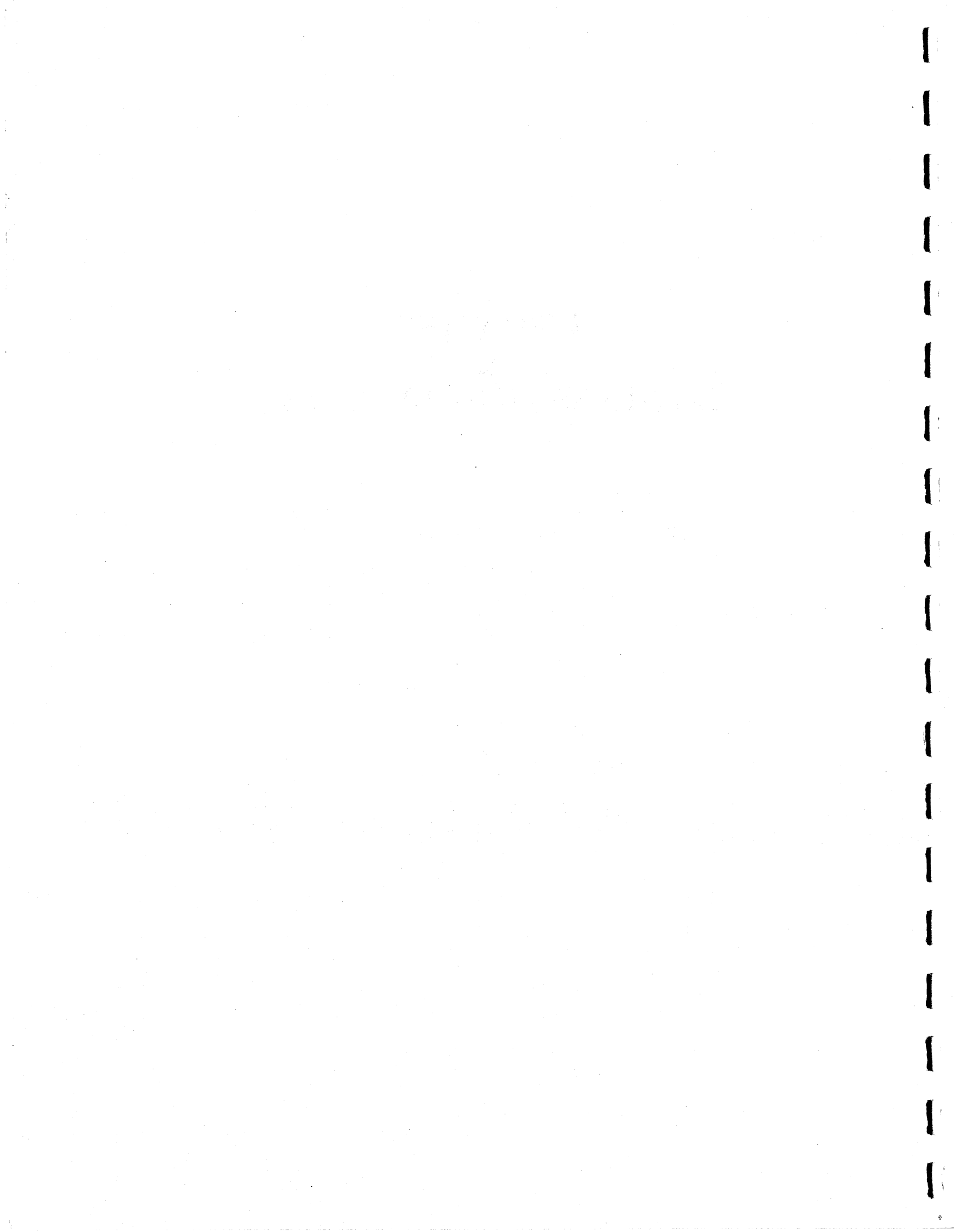
### CONTACT

Wyndham Hannaway  
GW Hannaway and Associates  
839 Pearl Street  
Boulder, Colorado 80302

(303) 444-9631

440-9631

**UTILITIES  
&  
ENGINEERING SUPPORT**



# AIDE-DE-CAMP

## DESCRIPTION

The AIDE-DE-CAMP software management system provides automated version control and information management for software developers. The ADC system manages changes across an entire software project. Software changes (csets) are treated as logical units which can be added to or subtracted from a named base version. Csets can include changes to any number of files and to the relationships between software entities. The ADC system operates on a database containing source code files, documentation, historical records, and detailed information about the software under development. The system provides extensive on-line inquiry facilities about the software under development. It also provides detailed source listings and off-line reports about the software. The ADC system can be used to develop software in any language. It is unobtrusive and allows the development team to use their editors and compilers of choice.

## IRIS PERFORMANCE INFORMATION

AIDE-DE-CAMP is a non-graphics application which can utilize the UNIX environment and computing power of an IRIS workstation.

## CONFIGURATION

Any basic IRIS 2000 series workstation.

## CONTACT

Richard Harter  
President  
Software Maintenance & Development Systems, Inc  
PO Box 555  
Concord, MA 01742  
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# EMACS

## DESCRIPTION

EMACS is a multi-window full screen editor permitting several files or different portions of the same file to be edited simultaneously. UniPress EMACS is based on James Gosling's highly acclaimed version and is a superb program development aid. EMACS is extensible through macros and the powerful built-in MLISP compiler, which permits user-written functions and packages.

Programs can be run underneath EMACS, with their output placed in an EMACS buffer. For example, EMACS will run a "make" file and place the source in one window with any error output in another window. It then analyzes the error output and sequentially visits each erroneous source line.

C, Pascal and MLISP programming assistance is available. C mode produces templates of language constructs in three different C styles. TOPS20/ITS, EMACS, EDT, vi and simple WordStar compatibility.

UNIX commands can be executed with output placed in a window. Shell windows can be established and commands executed from there. The shell window can give a full session history.

## IRIS PERFORMANCE INFORMATION

On the IRIS workstation, EMACS will execute exactly as in other UNIX environments.

## CONFIGURATION

This software is intended for use on the IRIS geometry computer products 1400, 1500, 2400, 2500 and 2400 Turbo.

## CONTACT

Robert G. Pearson  
Manager  
Applications Marketing  
Silicon Graphics, Inc.  
2011 Stierlin Road  
Mountain View, CA 94043  
(415) 960-1980

# EXCL COMMONLISP

## DESCRIPTION

ExCL Common LISP from Franz Inc is a full implementation of the Common LISP language as specified in the book Common LISP: The Language by Guy Steele Jr. (Digital Press, 1984). ExCL meets all Common LISP specifications, with no compromises and no sacrifice of performance.

Designed to produce highly optimized code, ExCL sets the industry standard for speed, size and debugging flexibility. The features of Common LISP include:

- o Lexically scoped interpreter and compiler
- o Powerful and flexible debugging aids
- o Complete implementation of arrays, vectors and strings
- o Powerful facilities for structures and macros
- o Lexical closures

In addition to meeting the full specifications of the Common LISP language, ExCL Common LISP from Franz Inc goes beyond to provide:

- o Full-featured built-in Flavors system for object oriented programming
- o Powerful and robust Flavors Function interface to functions and data structures in C, FORTRAN and other languages
- o On-line documentation

Franz Inc is a recognized leader in Artificial Intelligence systems. Its Franz LISP product enjoys the status of being the most widespread LISP in existence today. Franz Inc is committed to providing a high quality development and production environment across a variety of machines.

## IRIS PERFORMANCE INFORMATION

ExCL Common LISP has excellent performance on a 68020 system. It can call the IRIS GL directly to develop LISP based interactive graphics systems. ExCL comes with its own development and debugging environments.

## CONFIGURATION

ExCL Common LISP will execute on minimum configurations of all Silicon Graphics workstations.

## CONTACT

Quinn Tran  
Vice President, Marketing  
Franz, Inc  
1141 Harbor Bay Parkway  
Alameda, CA 94501  
(415) 769-5656

# FRANZ-LISP

## DESCRIPTION

FRANZ-LISP is the base for widely used expert system and AI system tools. These include OPS-5, Flavors, FRL, PEARL, MACSYMA, MRS, GLISP, various debugging and documentation systems, interfaces to relational database systems, graphics display systems, plus extensive libraries for numerical and combinational mathematics, statistics, and optimization.

Compiler & Interpreter: The FRANZ-LISP interpreter provides a convenient environment for program development. A wealth of debugging tools, including tracers, steppers, toplevels with history and other features are included. The FRANZ-LISP compiler generates production-speed code with several levels of optimization. The most highly optimized level provides performance unequaled by other LISP systems on comparable hardware.

FRANZ-LISP provides a superset of Common LISP capabilities: FRANZ-LISP now contains packages, hash tables, functions returning multiple values, keyword arguments and many Common LISP features.

Graphics Power: On workstations with graphics capabilities, FRANZ-LISP can access a full array of graphics features. Its ability to call functions written in C, Pascal, FORTRAN and other languages gives FRANZ-LISP unmatched graphics capability.

## IRIS PERFORMANCE INFORMATION

Highly interactive and quick response.

## CONFIGURATION

FRANZ-LISP requires an IRIS 1400, 2400, 2400 Turbo or 2500 workstation with 2 MB memory.

## CONTACT

Quinn Tran  
Vice President, Marketing  
Franz, Inc  
1141 Harbor Bay Parkway  
Alameda, CA 94501  
(415) 769-5656

# INFORMIX

## DESCRIPTION

Informix is a Relational Data Base management system which is flexible and easy to use. It consists of many modules which can allow a user to create his own complete data management system without custom programming. Interfaces exist to conventional programming languages to allow custom applications to store and retrieve data stored in INFORMIX. A Data Description language and data dictionary can be used to define data across many files if desired. A data base may reside in the system spanning many directories and physical devices. INFORMIX is available on many mini, micro, and main frame systems, so commonality of data and data access can be achieved.

## IRIS PERFORMANCE INFORMATION

All functions of INFORMIX will execute on the IRIS and it is fully supported by the vendor.

## CONFIGURATION

INFORMIX will work on any IRIS workstation.

## CONTACT

Neil Blumenfield  
Relational Database Systems, Inc.  
2471 E. Bayshore Road  
Suite 600  
Palo Alto, CA 94303  
(415) 424-1300

# OBJECTIVE-C

## DESCRIPTION

OBJECTIVE-C is a compiler which accepts the full C language plus message/object extensions. Objective-C runs inside the standard C production chain just after the C pre-processor. It adds to C the run-time semantics of Smalltalk-80 including dynamic messaging, objects, classes, inheritance and encapsulation. The effect is a language which combines the outstanding productivity of message/object programming with the efficiency and portability of C language. Since full access to the C language is retained, the programmer is free to mix object-oriented and conventional concepts within the same program. Programmers currently developing code in the C language can gracefully evolve to OBJECTIVE-C and maintain complete compatibility with the past.

OBJECTIVE-C will prove particularly valuable to programmers writing software for graphics, modeling applications, sophisticated user interfaces and simulation.

OBJECTIVE-C is designed for use by professional system builders and is an efficient tool for building complex systems in a wide variety of application areas.

## IRIS PERFORMANCE INFORMATION

Since OBJECTIVE-C uses standard C, all Graphics Library functions are readily available. OBJECTIVE-C uses the hardware floating point functionality of the IRIS 2400.

## CONFIGURATION

A basic IRIS 2000 Series workstation is all that is needed to execute OBJECTIVE-C.

## CONTACT

Chester J. Wisinski  
Productivity Products Intl.  
27 Glen Road  
Sandy Hook, CT 06482  
(203) 426-1875

# P-STAT

## DESCRIPTION

P-STAT offers a unique combination of data management and display, crosstabulation, and statistics all within a single, easy to use program. It features a non-procedural, conversational command language that allows the user to perform complex data analyses easily. P-STAT can be run in either conversational or batch mode from the same module.

P-STAT is used internationally by educational, commercial, and government installations. Typical applications include market research, personnel research, clinical trials, manufacturing analysis, system performance analysis, and teaching statistical methods. Functions include: Data Management, File Management Statistics, Data Display, Macros, and On-line Help.

## IRIS PERFORMANCE INFORMATION

On the IRIS 2400 or IRIS 2400 Turbo, P-STAT provides a powerful and comprehensive set of statistical analysis and data management routines.

## CONFIGURATION

P-STAT is supported on all IRIS workstations, including the 2400 Turbo.

## CONTACT

Sebbie Buhler  
P-STAT, Inc.  
P.O. Box AH  
Princeton, NJ 08542  
(609) 924-9100

# Q-CALC

## DESCRIPTION

Q-CALC has been designed specifically to take advantage of the power of UNIX. Q-CALC has extensive math and logic facilities and is very easy to learn and use through interactive prompts and help text. Q-CALC uses UNIX termcap, so any terminal can be supported.

Q-CALC features include: a model size of 999 by 18,000; UNIX and user program interfaces; horizontal or vertical windows; sorting, searching and consolidation; function key operation; command scripts; graphics for bar and pie charts; and an extensive range of functions including IF/THEN/ELSE, AND/OR and GREATER/LESS THAN.

## IRIS PERFORMANCE INFORMATION

On the IRIS workstation, Q-CALC will execute exactly as in other UNIX environments.

## CONFIGURATION

This software is intended for use on the IRIS workstation products 1400, 1500, 2400, 2400 Turbo and 2500.

## CONTACT

Joyce Bielen  
UniPress Software, Inc.  
2025 Lincoln Highway, Suite 312  
Edison, NJ 08817  
(201) 985-8000

# UNIPLEX-II

## DESCRIPTION

UNIPLEX-II is an integrated office automation package which incorporates powerful word processing, spreadsheet and relational database applications. It is fully customizable to suit individual needs. Components include: Word Processor; Spreadsheet; Relational database with SQL query language; Menu system; Screen Builder; and Print spooler.

As an integrated product, UNIPLEX-II at all times allows the user to access information and facilities from anywhere. For example, data can be freely moved from the Spreadsheet to the Word Processor and from the Database into the Spreadsheet and then to the Word Processor.

UNIPLEX-II is easy to use through "Softkeys" which display available options to the user in all the components. UNIPLEX-II uses the UNIX termcap and a built-in "T-cap" extension file to fully define any terminal. UNIPLEX-II is written in C and is available on a wide range of UNIX machines. Foreign language versions are also available.

## IRIS PERFORMANCE INFORMATION

UNIPLEX - II can fully execute on the IRIS workstations using our window manager environment.

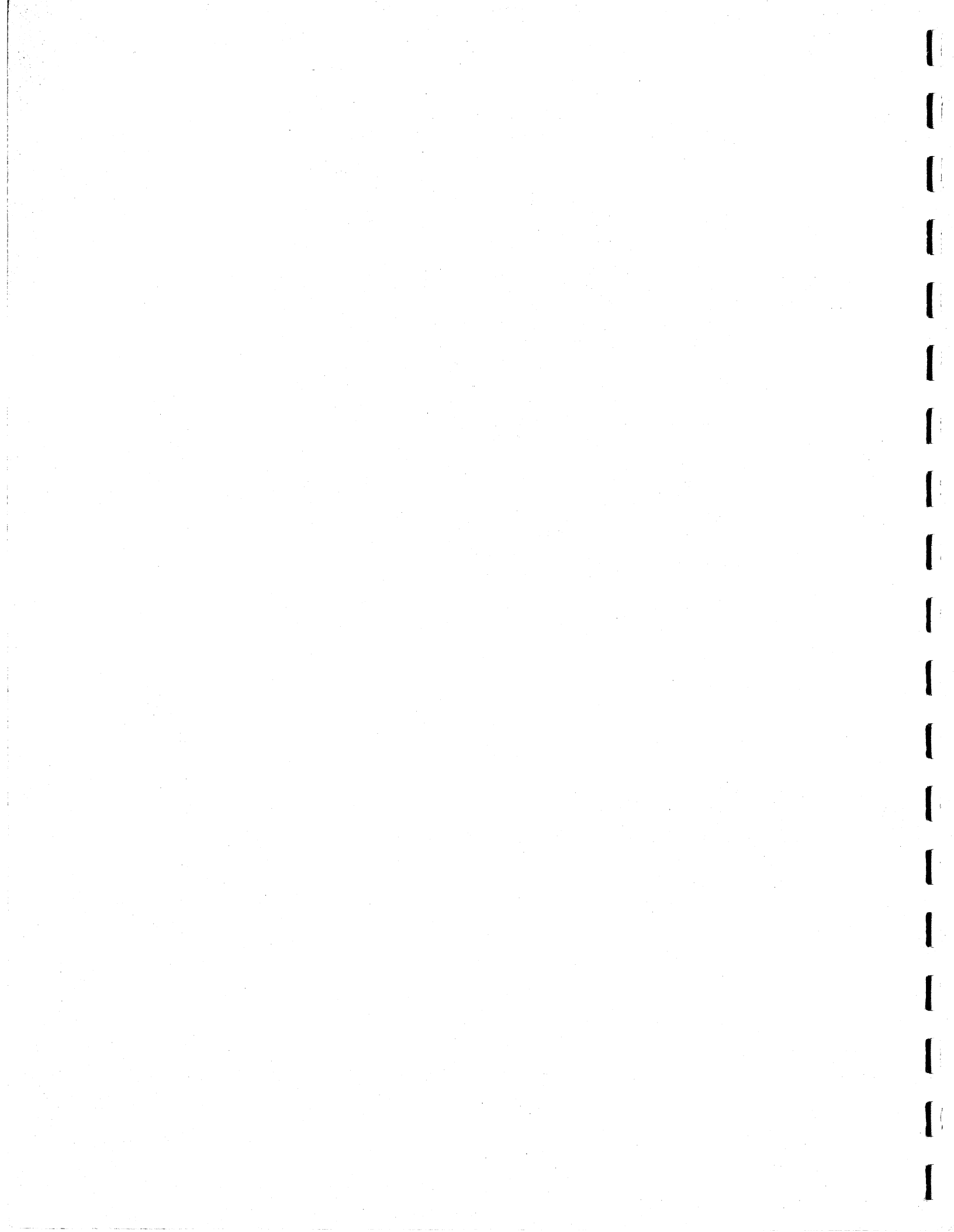
## CONFIGURATION

Any IRIS workstation will execute UNIPLEX - II.

## CONTACT

Joyce Bielen  
UNIPRESS Software, Inc.  
2025 Lincoln Highway  
Suite 312  
Edison, NJ 08817  
(201) 985-8000









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