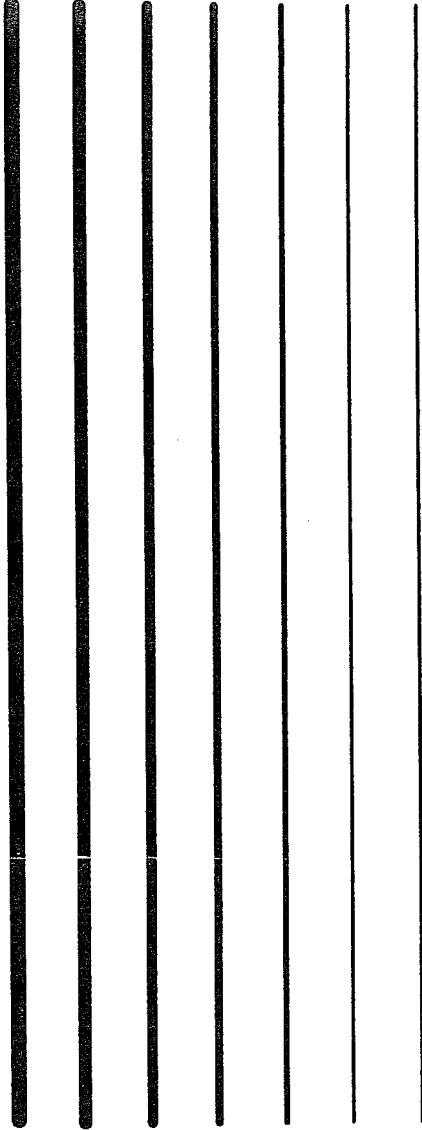




The Alliant Visualization Series



Accelerating the Innovation Process
for Scientists and Engineers

COMPANY BACKGROUND

Alliant Computer Systems

Six Years of Parallel Supercomputing Experience

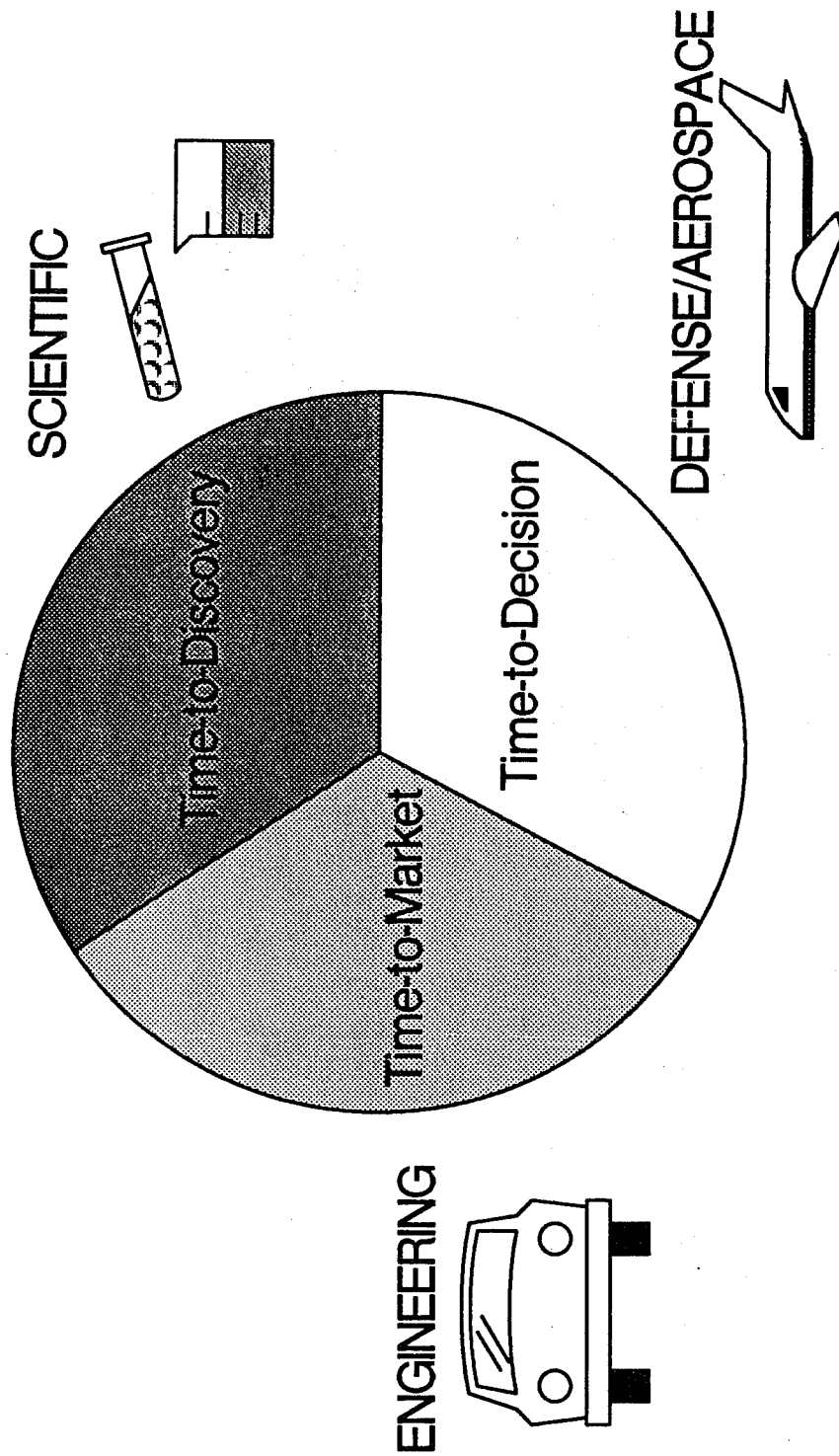
Raster Technologies

Seven Years of High Performance Graphics Expertise

Merged With Alliant in June 1988

TODAY'S TECHNICAL COMPUTING CHALLENGE

Reducing Time-to-Solution



THE DILEMMA:

Information-Without-Interpretation

“Today’s data sources are such fire hoses of information that all we can do is gather and warehouse the numbers that they generate.”

“Visualization in Scientific Computing” ,
Report to the National Science Foundation,
July, 1987

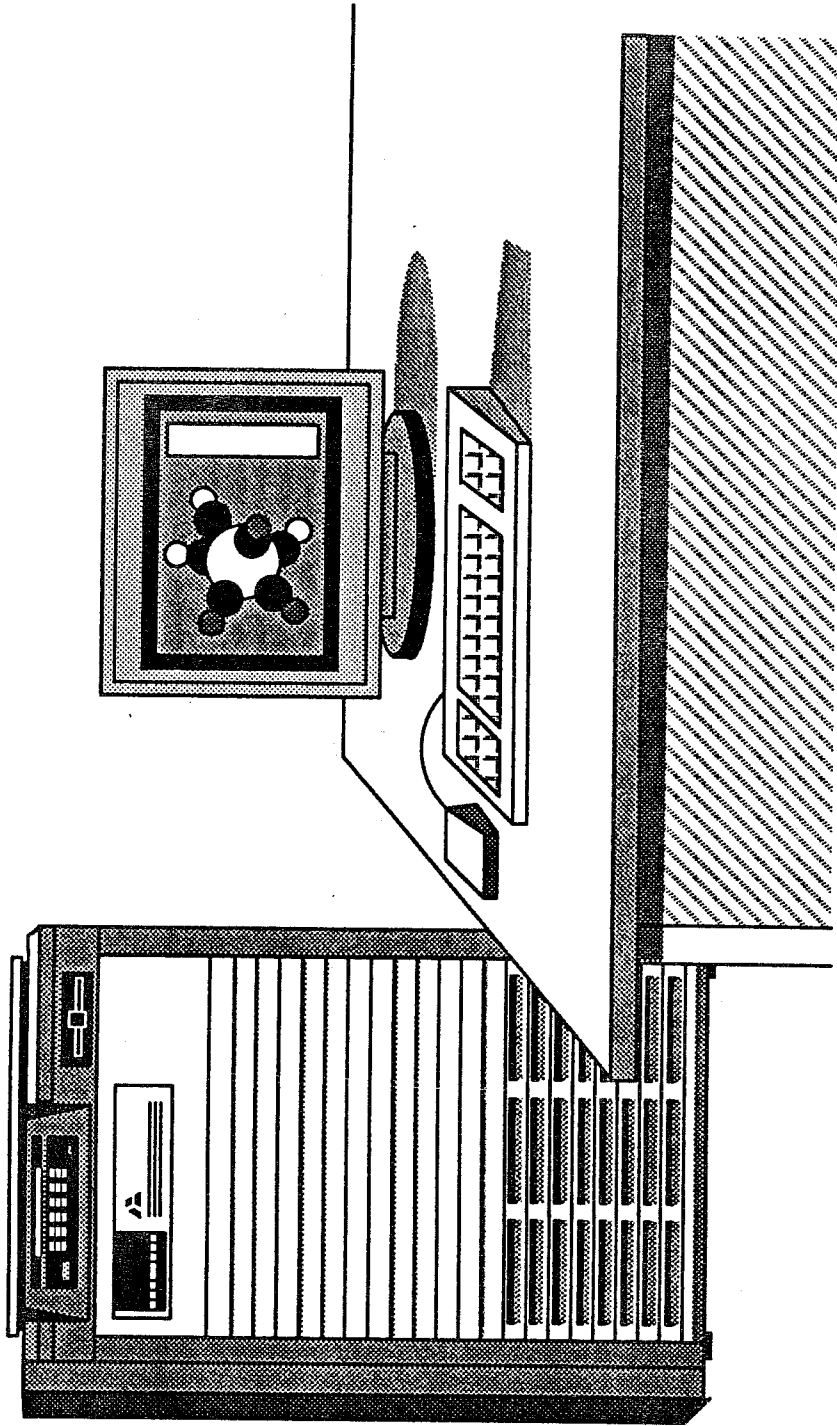
VISUALIZATION

A Solution to Data Overload

“Visualization is a method of computing. It enables researchers to observe their simulations and computations. Visualization enriches the process of discovery and fosters profound and unexpected insights.”

“Visualization in Scientific Computing”,
Report to the National Science Foundation,
July, 1987

THE ALLIANT VISUALIZATION SERIES



**HIGH-PERFORMANCE
VISUAL SUPERCOMPUTING™**

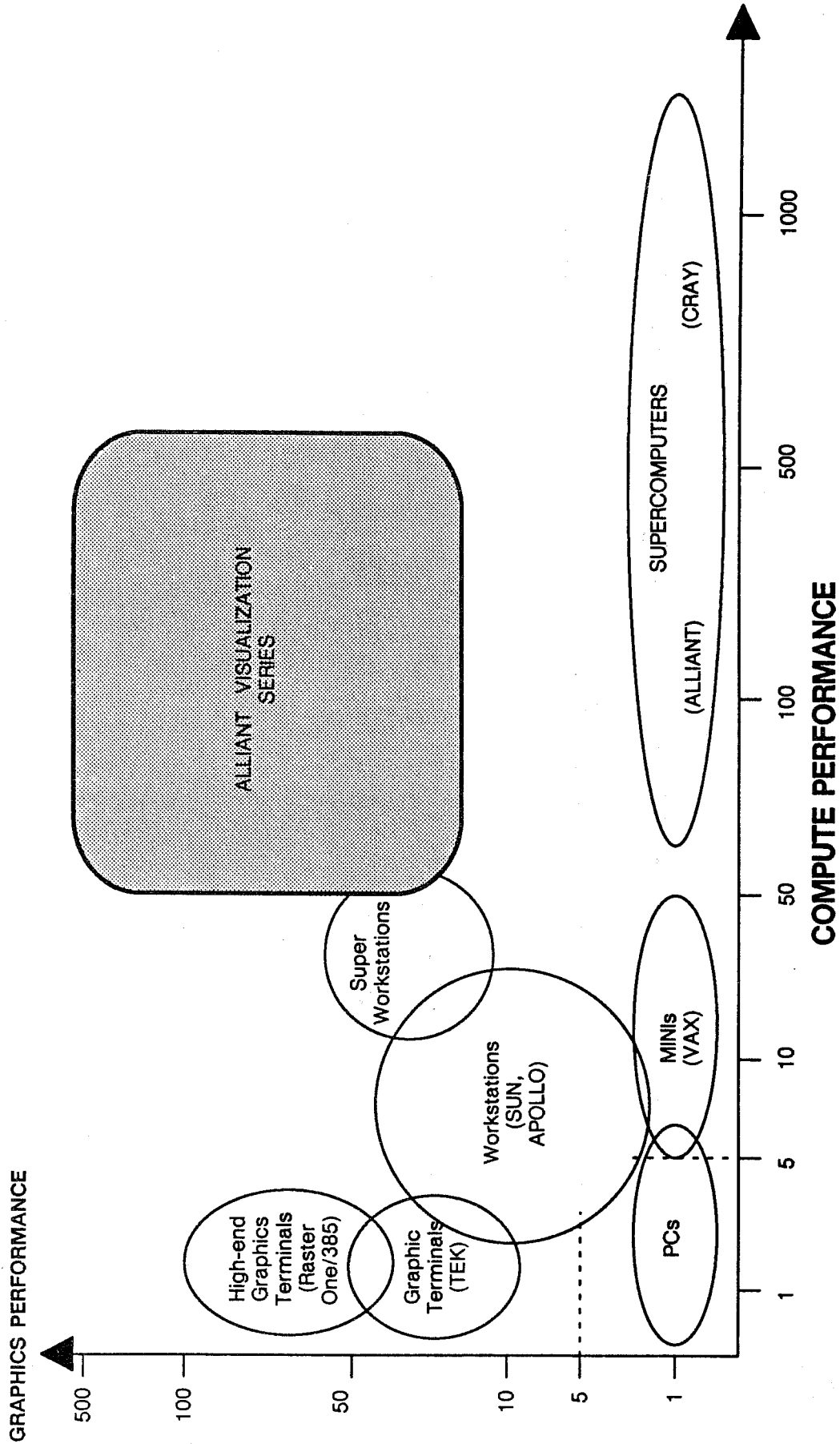
THE ALLIANT VISUALIZATION SERIES

A Combination Of:

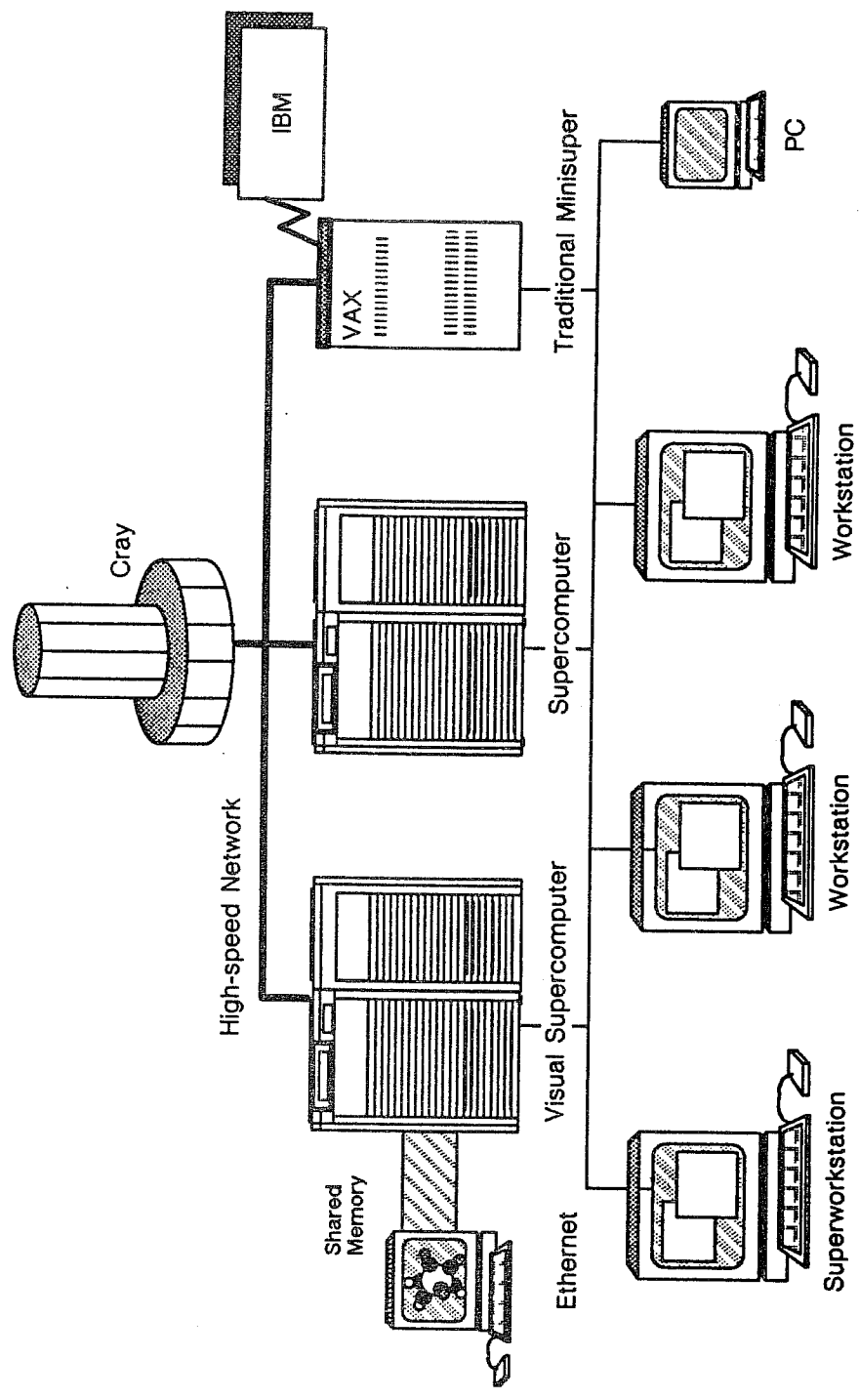
- The Alliant FX/Series Parallel Supercomputer and High-performance 3-D Graphics

Tightly-Integrated in a Single System Via High-Speed Shared Memory

HIGH-PERFORMANCE SUPERCOMPUTING AND GRAPHICS

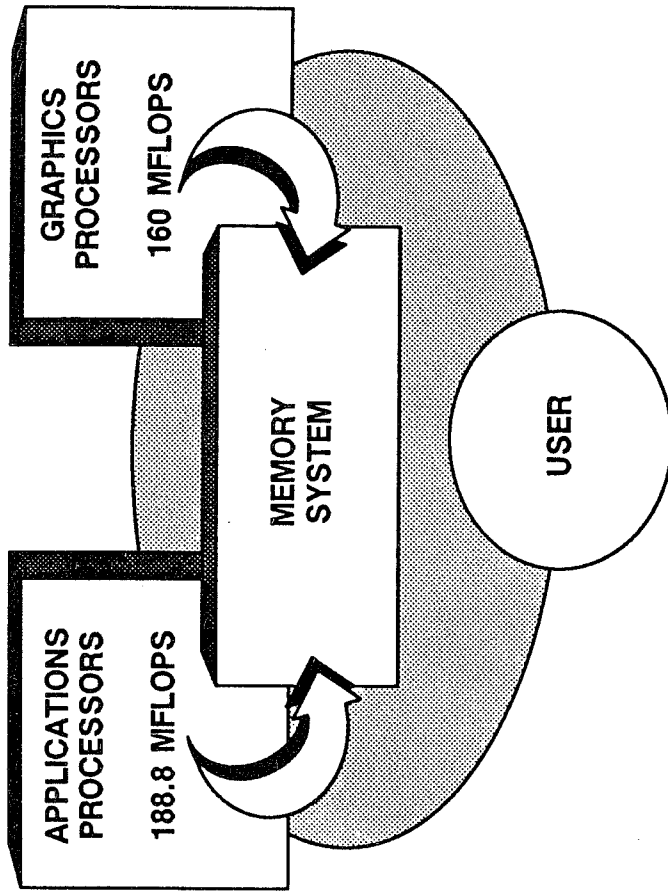


THE NEED FOR VISUALIZATION AT ALL LEVELS OF THE COMPUTING HIERARCHY



VISUAL SUPERCOMPUTING

Simultaneous Supercomputing and Graphics

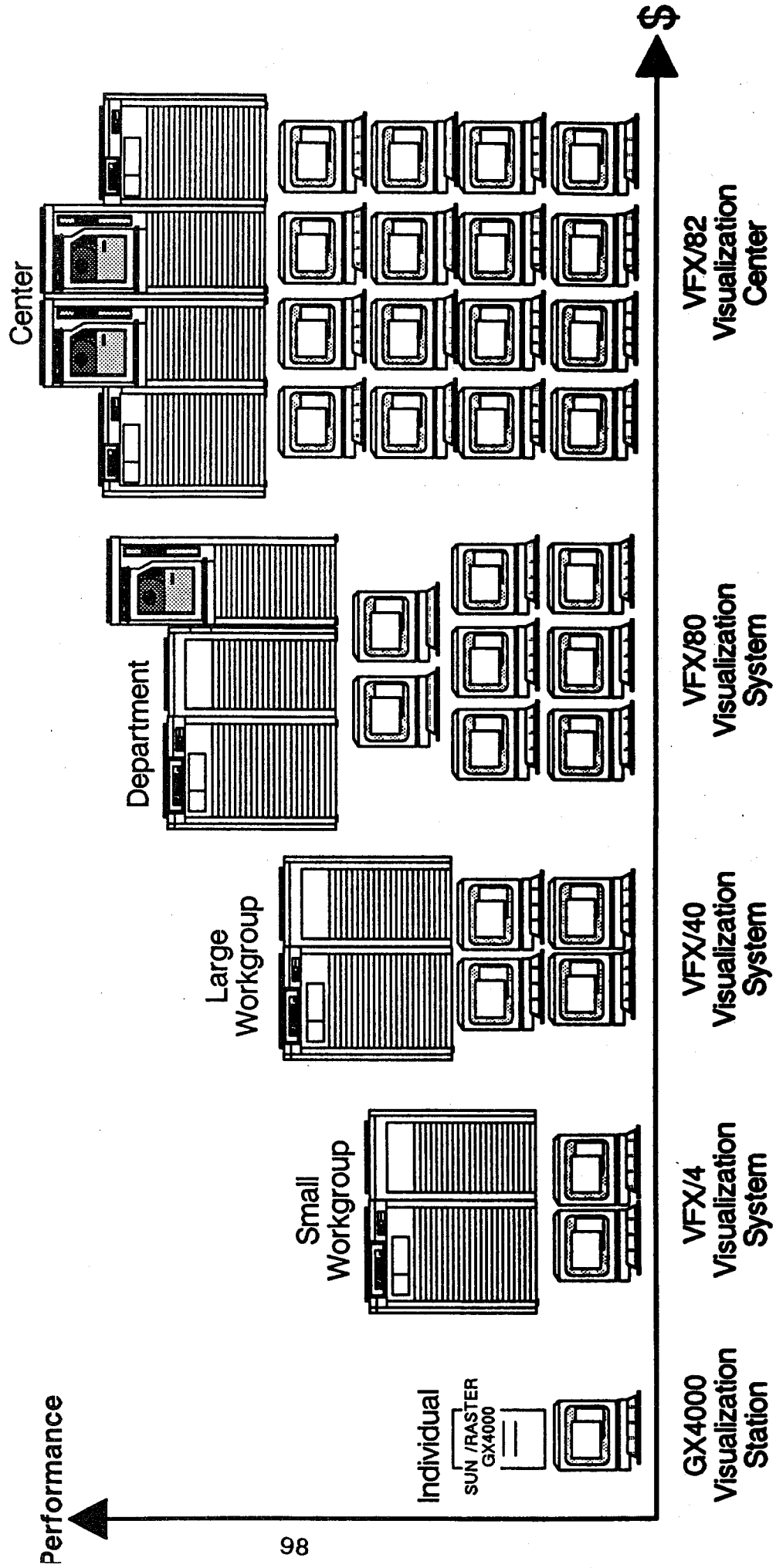


- Multiple Dedicated Resources
- Tight Integration via Shared Memory

PARALLEL PROCESSING FOR APPLICATIONS AND GRAPHICS

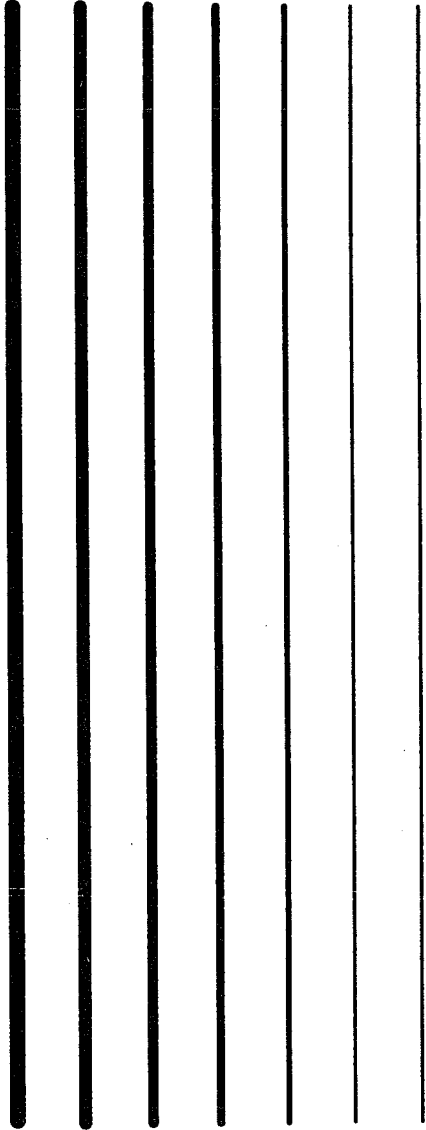
- Superior Performance
- Expandable
- Transparent
- Investment Protection

A COMPLETE FAMILY OF VISUAL SUPERCOMPUTERS

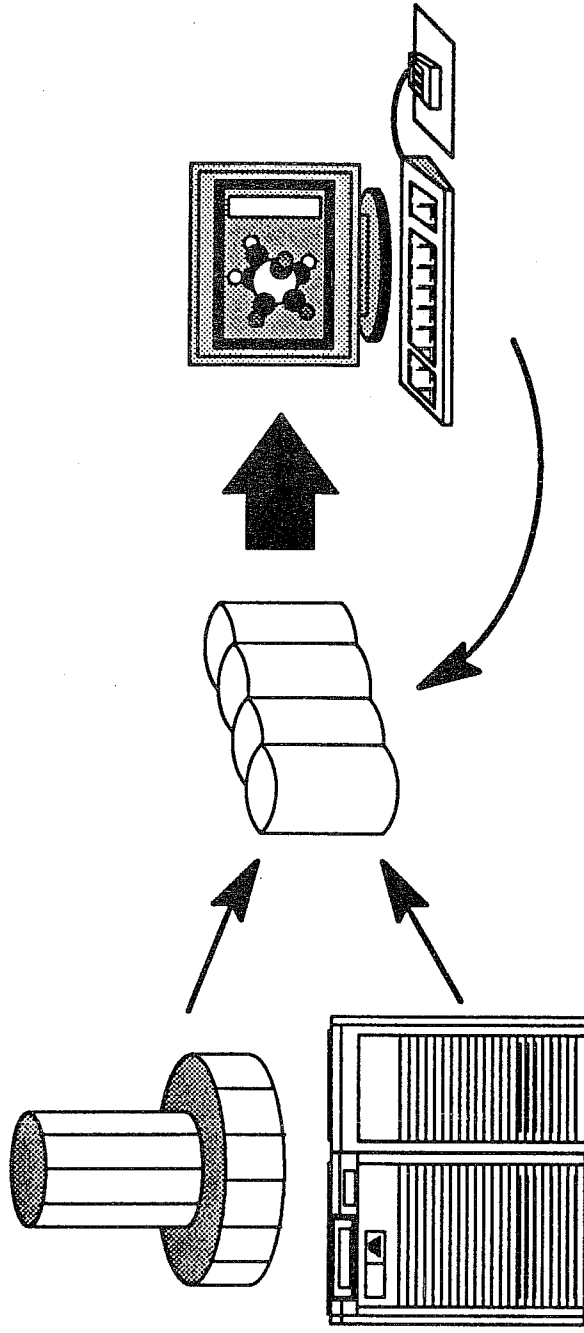




Visual Supercomputing Applications



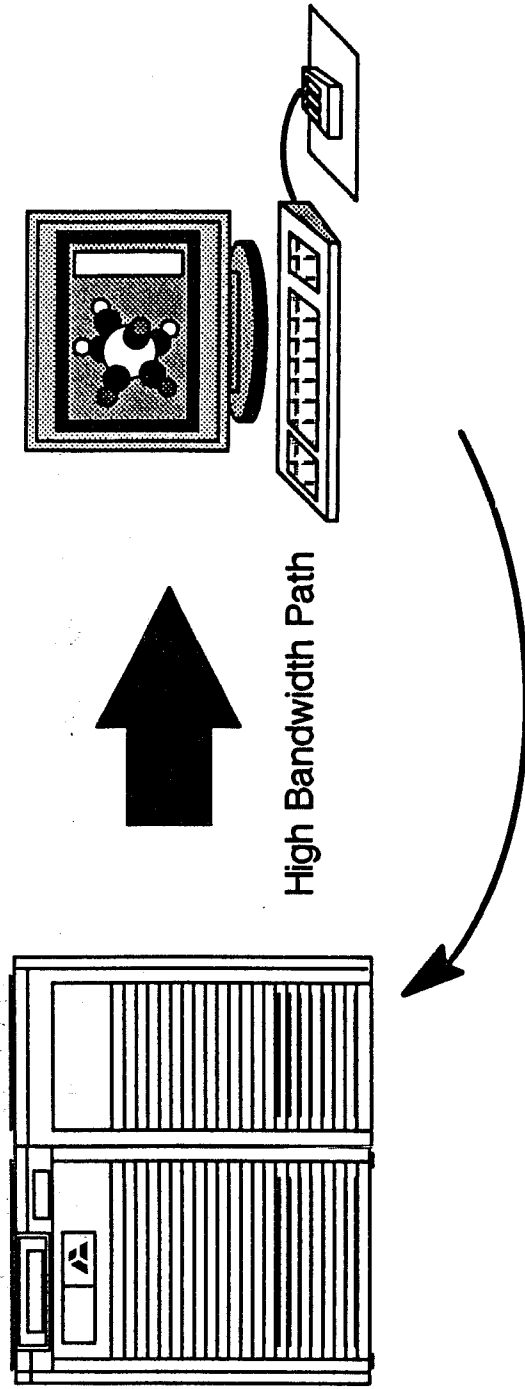
APPLICATION: INTERACTIVE POST-PROCESSING OF LARGE DATA SETS



Visual Supercomputer Required For:

- Data Filtering, Feature Extraction, Rendering
- Interactive Image Playback/Analysis
- Video Production
- Multi-User Development

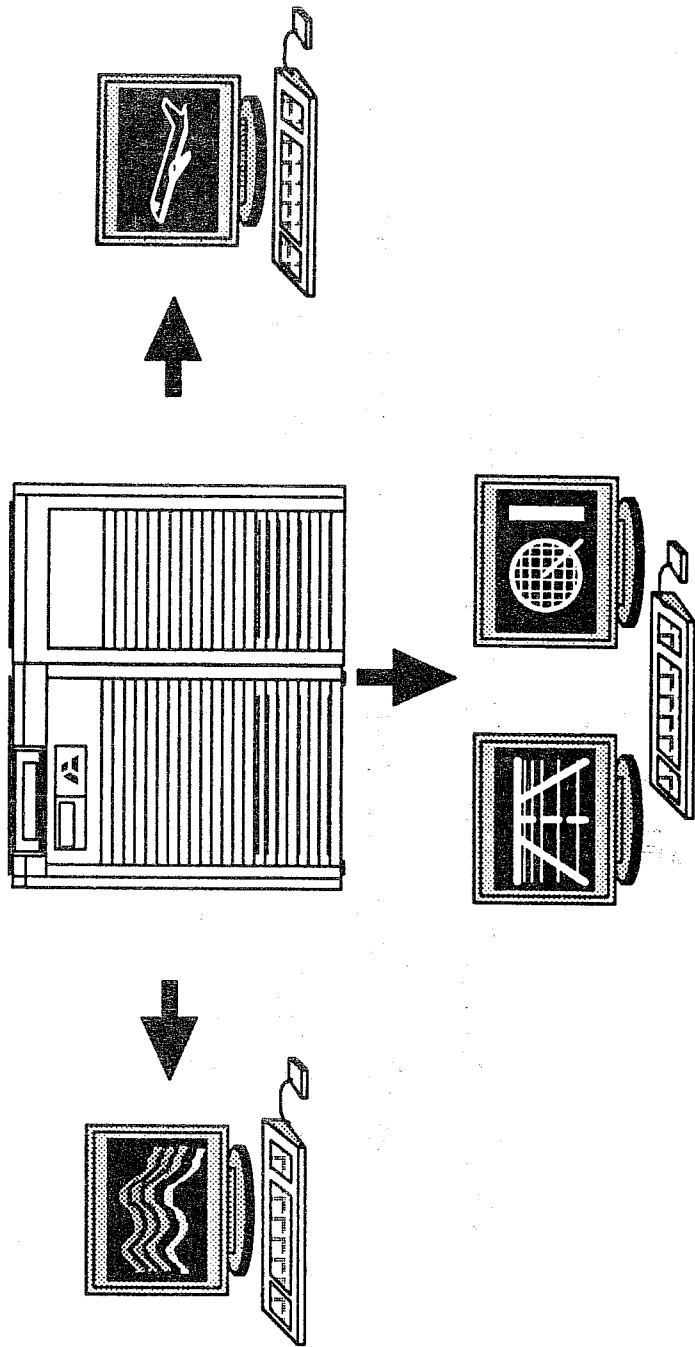
APPLICATIONS: REAL-TIME VISUAL OUTPUT FROM LARGE-SCALE COMPUTATION



Visual Supercomputer Required For:

- Executing Application and Graphics Simultaneously
- Steering Calculation With User Feedback
- Multi-User Development

APPLICATION: REAL-TIME DEFENSE/AEROSPACE SIMULATION



Visual Supercomputer Required For:

- Computing and Generating Scenes from Large Databases
- Multiple Simultaneous Video Displays
- Displaying Input from Users and Real-time Devices
- Multi-User Development

OPEN SYSTEMS FOR GRAPHICS

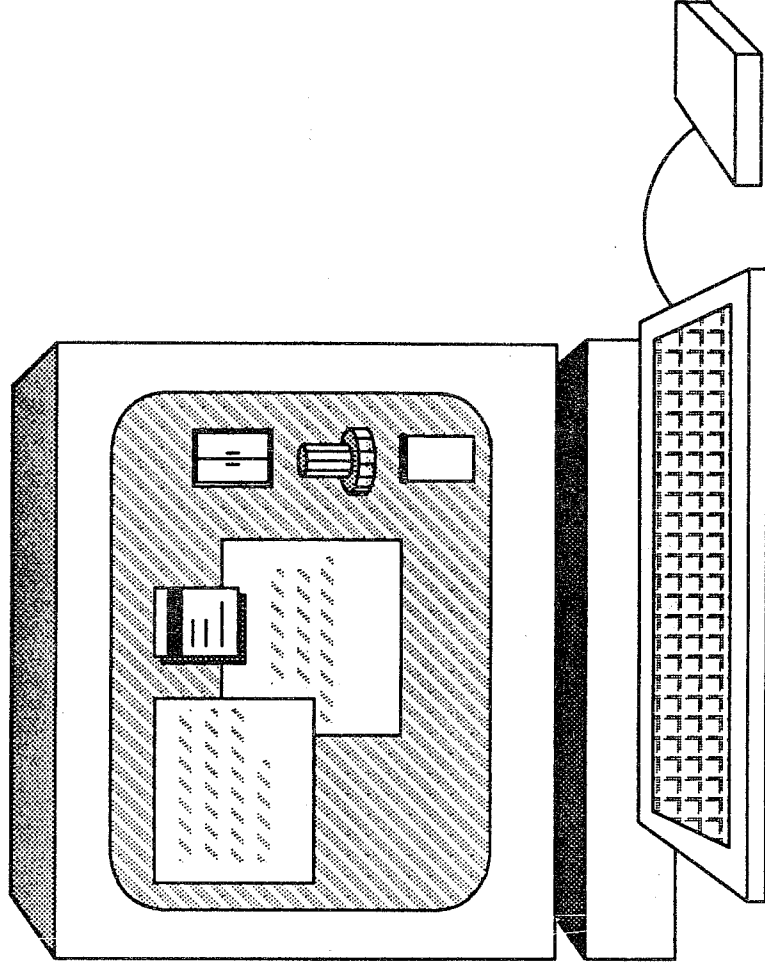
PHIGS and PHIGS+

- Industry Standard for 3D Graphics
- IBM, DEC, HP, Sun, Apollo
- Application Portability
- VFX Provides Standards *Without Sacrificing Performance*

EASE-OF-USE VIA X11 and NeWS

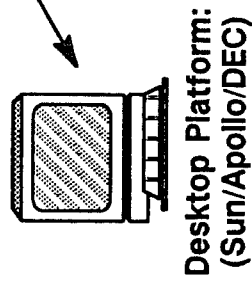
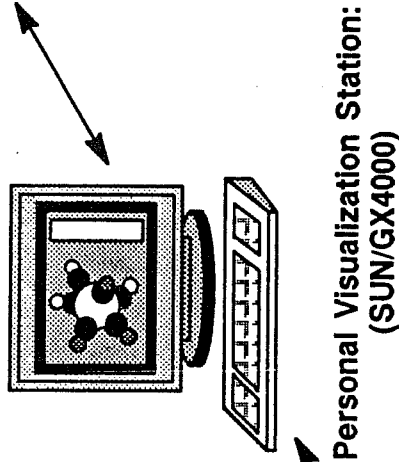
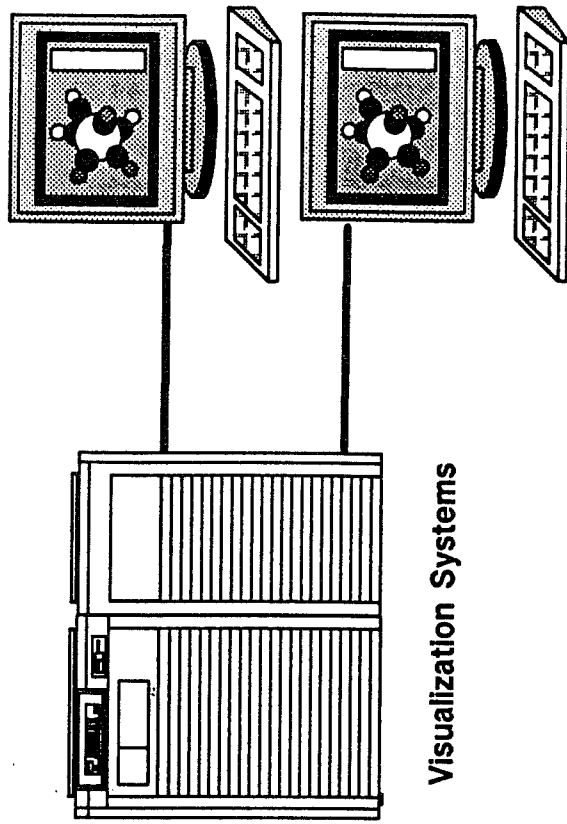
The First Supercomputer

With the Look and Feel of a Workstation



COMPATIBILITY AND GROWTH

Applications Portability via PHIGS and X/News



INTERACTIVE VISUALIZATION SOFTWARE

VIEDGE™

- High-Level Tool For Visualizing and Interpreting Complex 3-D Data Sets
- For Scientists/Engineers Without Graphics Programming Expertise

KEY APPLICATION AREAS

- Simulation and Control
- Computational Chemistry
- Computational Fluid Dynamics
- Scientific Visualization and Animation

APPLICATIONS STATUS

- **Simulation and Control**
 - Gemini Visual System (GVS)
 - Lincom
 - Image Data Corporation – Future

- **Computational Chemistry**
 - AMBER and GRAMPS
 - Molecular Surfaces (Connolly)
 - Biograf (Biodesign) – Future
 - Others (Negotiations Underway)

- **Computational Fluid Dynamics**
 - Fluent and Fluent/BFC (Creare)
 - PLOT3D, GAS, RIP (NASA/AMES) – Future
 - Others (Negotiations Underway)

- **Tools for Scientific Visualization and Animation**
 - VISEGE
 - WAVEFRONT – Future
 - Neo-Visuals – Future

THE TIME-TO-SOLUTION OPPORTUNITY

Most Vendors Provide Only a Piece of the Total Time-to-Solution Requirement.

Only Alliant Offers the Total Capability:

- Supercomputing for Large Problems
- Tightly-Integrated 3D Graphics
- Tools for Visualization