

GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 11/18/91

Project No. B-10-F13

Center No. 10/24-6-R7190-0A0

Project Director DYER F B

School/Lab OIP

Sponsor NCR/ATLANTA, GA

Contract/Grant No. AGMT DTD 910429 Contract Entity GTRC

Prime Contract No.

Title PC ANIMATION INVESTIGATIONS

Effective Completion Date 910829 (Performance) 910829 (Reports)

Closeout Actions Required:	Y/N	Date Submitted
Final Invoice or Copy of Final Invoice	Y	
Final Report of Inventions and/or Subcontracts	N	
Government Property Inventory & Related Certificate	N	
Classified Material Certificate	N	
Release and Assignment	N	
Other	N	

Comments

Subproject Under Main Project No.

Continues Project No.

Distribution Required:

Project Director	Y
Administrative Network Representative	Y
GTRI Accounting/Grants and Contracts	Y
Procurement/Supply Services	Y
Research Property Management	Y
Research Security Services	N
Reports Coordinator (OCA)	Y
GTRC	Y
Project File	Y
Other	N
	N

PC ANIMATION ENVIRONMENT INVESTIGATIONS

FINAL TECHNICAL REPORT

prepared for

**Human Interface Technology Center
NCR Corporation**

by

Andrew M. Quay & William E. Price

October 29, 1991

**Multimedia Technology Laboratory
Office of Interdisciplinary Programs
GEORGIA INSTITUTE OF TECHNOLOGY
Atlanta, Georgia 30332**

NCR Animation Investigation

Animation is usually one of the key components of any multimedia application. It adds an important element to communication: motion and the ability to show relationships. Because of the popularity of multimedia and advancements in technology, the market is currently becoming heavily flooded with animation environments for the NCR Personal Computer (PC) and compatibles. The goal of this investigation was to pinpoint the best animation packages on the market and how these packages could be used in support of NCR HITC multimedia activities.

There are currently many excellent animation packages available on the Apple Macintosh, but the usability of comparable packages on the PC has been very limited. Georgia Tech did hands-on testing of several popular packages and researched most of the other packages on the market. We discovered that there are still no complete packages available on the PC, but found the combination of some products to be very successful. Several new promising products have been announced, but are not currently available to the consumer. The most promising upcoming release, Macromind Director for Windows, is very far behind schedule, and is now available in a severely scaled back version known as Macromind Action!

The release of Microsoft Windows 3.0 has led to the release of a multitude of new Windows based Multimedia Authoring packages. We looked at several of these, including Icon Author, Icon Animate, Knowledge Pro, Plus, and Toolbook. We found that none of these packages are useful in developing complete multimedia applications. Icon Author is good for simple interactive video pieces when the flow of a presentation is straightforward or linear. This flow chart based system works best if the author has an idea of what actions need to happen at keypoints in their presentation. Several options are forthcoming. Autodesk has just released a Dynamic Link Library (DLL) for playing back Animator Flic files inside MS Windows. This DLL is callable from several packages, including Visual Basic and Toolbook. Autodesk has also announced a full version of Animator for Windows. This should be a powerful package for preparing outstanding animations and simple linear presentations. Using the DLL in conjunction with a more powerful package should allow for complete interactive applications. Icon Animate is a low cost and performance 2D animation package for Windows. It appears to be

simple to use, but playback speed probably suffers due to the fact that it runs in the Windows environment. Macromind has just released as new package, Action! , that appears to be the "Overview" portion of Macromind Director for the Macintosh. This will allow for simple Multimedia presentations involving audio, animation and other effects in a linear form. There is also a convertor available that will take Macromind Director files from the Macintosh and convert them into a form playable inside Windows. LINGO (the Director scripting language) also converts with the animation, this provides one method of executing interactive applications inside Windows. A full release of Director for Windows has been announced. This will allow full authoring on the PC. Authorware for Windows is also available, but its high cost rules it out for most purposes.

Windows is only a small part of the PC compatible market. Most PC's still run DOS. There are several products available in the DOS market. Animator Pro has just been released. This new version of Animator provides support for high resolution graphics modes. This improvement makes Animator Pro very good for creating linear animations. Once animations are created, the flic files can be used in several ways to create interactive shows. GRASP 4.0 is the latest release of an animation and interactive program. GRASP's most powerful feature is not its animation features but the ability to link into other programs. This allows GRASP presentations to be combined with C programs to allow for powerful possibilities. The latest version of GRASP imports Animator flics, which allows the author to create animations in the superior Animator environment, and then use GRASP and C to create interactive presentations. There are several other authoring environments available, such as Ten Core, Linkway, Storyboard Live!, AVC, Ask Me 2000 and many others. Most of these packages are incomplete or very specialized. The main advantage that most of these products have over their Windows counterparts is that they run much faster because there is no Windows overhead.

Currently, it would seem that the most promising path for NCR to take would be their existing path. NCR should continue to use Animator for graphics design and animation, and to use GRASP and C for interactive control. Now that a new version of GRASP is available that can directly read Animator files, this process is much simpler. The new high resolution modes in Animator Pro are very attractive. However, when the destination of the video output is NTSC, the current 320 by 200 is adequate and can play at a higher frame rate than the high resolution modes. The Macromind Director Windows playback module is a possible alternative, but with the Windows overhead, a fast PC is required for the delivery unit. Also,

development is required on a Macintosh. Sources inside IBM have mentioned new Authoring systems coming from them at some future time, but quality of past IBM multimedia software does not generate much hope for an outstanding package. Perhaps the best approach would be to consider developing a custom package, such as GTMedia, developed by Georgia Tech for use on the AMIGA. This would allow designing a system to NCR's requirements. Also, having access to the source code of such a package is very useful when a special functionality for a project is required. Georgia Tech has quickly discovered that no authoring system can meet all of the needs of advanced users, and that custom code is often the only solution to novel interaction schemes that require Multimedia.

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

Comments

3D renderer
mid-line animator
Playback through Animator Pro

File Import Types

- | | |
|---|--|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input checked="" type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input checked="" type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input checked="" type="checkbox"/> .GIF | <input checked="" type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macintosh |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|---|--|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input checked="" type="checkbox"/> Targa | <input checked="" type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input checked="" type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input checked="" type="checkbox"/> .GIF | <input checked="" type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|--|
| <input type="checkbox"/> 2-D |
| <input checked="" type="checkbox"/> 3-D |
| <input type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input checked="" type="checkbox"/> Effects with Animation |
| <input checked="" type="checkbox"/> Transition Effects |

External Device Support

- | |
|--|
| <input checked="" type="checkbox"/> Videodisc |
| <input checked="" type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input type="checkbox"/> Audio |
| <input type="checkbox"/> Full Motion Video Board |
| <input type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

2D Shaper
3D Loftter
3D Editor
Materials Editor

Hardware Requirements

Video Modes	VGA
	Display Indep.
Max Colors	
Recommended Video Card	TARGA
Hard Disk	20 meg
RAM	3 meg
Minimum CPU	386 w/ 387
Recommended CPU	486
mouse	yes
Other Hardware Required	

Software Requirements

Play back Module

<input type="radio"/> Available

Run Time Rights
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

Sound, Graphics, motion and animation.
Interactive buttons to control.
Create scenes, synchronize timing and action,
print to video with VCR and video output card.

Comments

"Overview" portion of Macromind Director.
Includes clip media library.

File Import Types

- | | |
|--|----------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input checked="" type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|-----------------------------------|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|---|
| <input checked="" type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input checked="" type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input type="checkbox"/> Transition Effects |

External Device Support

- | |
|--|
| <input type="checkbox"/> Videodisc |
| <input checked="" type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input checked="" type="checkbox"/> Audio |
| <input type="checkbox"/> Full Motion Video Board |
| <input checked="" type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text" value="VGA"/>
Max Colors	<input type="text" value="? (XGA)"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text"/>
RAM	<input type="text" value="2Mb"/>
Minimum CPU	<input type="text" value="286"/>
Recommended CPU	<input type="text" value="386 or 486"/>
mouse	<input type="text" value="Recommended"/>
Other Hardware Required	<input type="text"/>

Software Requirements

<input type="text" value="Windows 3.0, Dos 3.1"/>

Play back Module

<input type="radio"/> Available
<input type="text"/>
<input type="text"/>
<input type="text"/>

Run Time Rights
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name
Company
Price Upgrade Price

Version
Phone Number
Release Date

Classification

New Features

High Resolution Super VGA Support

Comments

File Import Types

- | | |
|-----------------------------------|----------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> .AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|-----------------------------------|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> .AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|--|
| <input checked="" type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input type="checkbox"/> Sprites |
| <input checked="" type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input checked="" type="checkbox"/> Imports Animations |
| <input checked="" type="checkbox"/> Tweening of Shapes |
| <input checked="" type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input type="checkbox"/> Transition Effects |

External Device Support

- | |
|--|
| <input type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input type="checkbox"/> Audio |
| <input type="checkbox"/> Full Motion Video Board |
| <input type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text"/>
Max Colors	<input type="text"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text"/>
RAM	<input type="text"/>
Minimum CPU	<input type="text"/>
Recommended CPU	<input type="text"/>
mouse	<input type="text"/>
Other Hardware Required	<input type="text"/>

Software Requirements

Play back Module

<input type="radio"/> Available	
Run Time Rights	<input type="text"/>
Size	<input type="text"/>
System Load	<input type="text"/>

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name Ask Me 2000 Professional

Version

Company Innovation Communication Systems, Inc. (ICS)

Phone Number

Price \$1,795

Upgrade Price

Release Date

Classification animation

New Features

Comments

scripting
Ask-Me 2000 is available. Low end, cheap.
No support for Video.

File Import Types

- | | |
|--|--|
| <input checked="" type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input checked="" type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|--|-------------------------------|
| <input checked="" type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|--|
| <input type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input checked="" type="checkbox"/> Transition Effects |

External Device Support

- | |
|---|
| <input type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input type="checkbox"/> Audio |
| <input checked="" type="checkbox"/> Full Motion Video Board |
| <input checked="" type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	
Max Colors	
Recommended Video Card	
Hard Disk	
RAM	
Minimum CPU	
Recommended CPU	
mouse	
Other Hardware Required	

Software Requirements

--

Play back Module

☐ Available

Run Time Rights
Size
System Load

Customer Support

--

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name
Company
Price Upgrade Price

Version
Phone Number
Release Date

Classification

New Features

support windows 3.0 extensions

Comments

Very Expensive

File Import Types

- | | |
|---|----------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|---|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- ☐ 2-D
- ☐ 3-D
- ☐ Sprites
- ☐ Cell Animation
- ☐ Frame Animation
- ☐ Paths
- ☐ Imports Animations
- ☐ Tweening of Shapes
- ☐ Tweening of Movement
- ☐ Effects with Animation
- ☐ Transition Effects

External Device Support

- ☒ Videodisc
- ☐ VCR
- ☐ CD-ROM
- ☐ Video Digitizer
- ☒ Audio
- ☒ Full Motion Video Board
- ☒ SoundBlaster
- ☐ MIDI

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text"/>
Max Colors	<input type="text"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text"/>
RAM	<input type="text"/>
Minimum CPU	<input type="text"/>
Recommended CPU	<input type="text"/>
mouse	<input type="text"/>
Other Hardware Required	<input type="text"/>

Software Requirements

Play back Module

<input type="radio"/> Available	
Run Time Rights	<input type="text"/>
Size	<input type="text"/>
System Load	<input type="text"/>

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

Comments

File Import Types

- | | |
|--|---|
| <input checked="" type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input checked="" type="checkbox"/> Macintosh |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|-----------------------------------|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|--|
| <input type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input checked="" type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input checked="" type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input type="checkbox"/> Transition Effects |

External Device Support

- | |
|--|
| <input type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input type="checkbox"/> Audio |
| <input type="checkbox"/> Full Motion Video Board |
| <input type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text" value="320 x 200"/>
Max Colors	<input type="text" value="256"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text" value="5 meg"/>
RAM	<input type="text" value="640K"/>
Minimum CPU	<input type="text"/>
Recommended CPU	<input type="text"/>
mouse	<input type="text" value="yes"/>
Other Hardware Required	<input type="text"/>

Software Requirements

Play back Module

<input type="radio"/> Available
Run Time Rights
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

Comments

Price may be much higher. New release of Beta playback module is \$900. Works in Multimedia Windows.

File Import Types

- | | |
|--|---|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input checked="" type="checkbox"/> Macinto |
| <input checked="" type="checkbox"/> Director | |

File Export Types

- | | |
|--|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input checked="" type="checkbox"/> Director | |

Animation Features

- | |
|--|
| <input checked="" type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input checked="" type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input checked="" type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input checked="" type="checkbox"/> Transition Effects |

External Device Support

- | |
|---|
| <input checked="" type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input checked="" type="checkbox"/> Video Digitizer |
| <input checked="" type="checkbox"/> Audio |
| <input checked="" type="checkbox"/> Full Motion Video Board |
| <input type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<div></div>
Max Colors	<div></div>
Recommended Video Card	<div></div>
Hard Disk	<div></div>
RAM	<div></div>
Minimum CPU	<div></div>
Recommended CPU	<div></div>
mouse	<div></div>
Other Hardware Required	<div></div>

Software Requirements

Play back Module

<input type="radio"/> Available	
Run Time Rights	<div></div>
Size	<div></div>
System Load	<div></div>

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name Version
 Company Phone Number
 Price Upgrade Price Release Date

Classification

New Features

Comments

File Import Types

- ☐ .PCX ☐ .CGM
☐ Targa ☒ .FLI
☐ .BMP ☐ .DXF
☐ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF ☐ Macinto
☐ Director

File Export Types

- ☐ .PCX ☐ .CGM
☐ Targa ☐ .FLI
☐ .BMP ☐ .DXF
☐ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF
☐ Director

Animation Features

- ☐ 2-D
☐ 3-D
☐ Sprites
☐ Cell Animation
☐ Frame Animation
☐ Paths
☐ Imports Animations
☐ Tweening of Shapes
☐ Tweening of Movement
☐ Effects with Animation
☐ Transition Effects

External Device Support

- ☐ Videodisc
☐ VCR
☐ CD-ROM
☐ Video Digitizer
☐ Audio
☐ Full Motion Video Board
☒ SoundBlaster
☐ MIDI

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	up to 1,280 X 1,024
Max Colors	256
Recommended Video Card	
Hard Disk	
RAM	
Minimum CPU	
Recommended CPU	
mouse	
Other Hardware Required	

Software Requirements

Play back Module

	<input checked="" type="radio"/> Available
Run Time Rights	
Size	
System Load	

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

embed animations with audio and music

Comments

older version was:
good for text intensive apps w/ simple
graphics, audio, and video. Inadequate for
animation, video, hi-res.

File Import Types

- | | |
|-----------------------------------|----------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|-----------------------------------|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- ☐ 2-D
- ☐ 3-D
- ☐ Sprites
- ☐ Cell Animation
- ☐ Frame Animation
- ☐ Paths
- ☐ Imports Animations
- ☐ Tweening of Shapes
- ☐ Tweening of Movement
- ☐ Effects with Animation
- ☐ Transition Effects

External Device Support

- ☐ Videodisc
- ☐ VCR
- ☐ CD-ROM
- ☐ Video Digitizer
- ☐ Audio
- ☐ Full Motion Video Board
- ☐ SoundBlaster
- ☐ MIDI

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text"/>
Max Colors	<input type="text"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text"/>
RAM	<input type="text"/>
Minimum CPU	<input type="text"/>
Recommended CPU	<input type="text"/>
mouse	<input type="text"/>
Other Hardware Required	<input type="text"/>

Software Requirements

Play back Module

<input type="radio"/> Available
<input type="text"/>
<input type="text"/>
<input type="text"/>

Run Time Rights
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name	Icon Animate
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Version 3.0

Company	Aimtech Corp.
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Phone Number (603) 883-0220

Upgrade Price

Release Date

Classification	animation
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New Features

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<input type="checkbox"/> .PCX	<input type="checkbox"/> .CGM
<input type="checkbox"/> Targa	<input type="checkbox"/> .FLI
<input type="checkbox"/> .BMP	<input type="checkbox"/> .DXF
<input type="checkbox"/> .TIFF	<input type="checkbox"/> AVC
<input type="checkbox"/> .GIF	<input type="checkbox"/> .CEL
<input type="checkbox"/> .RIFF	<input type="checkbox"/> Macintosh
<input type="checkbox"/> Director	

<input type="checkbox"/> .PCX	<input type="checkbox"/> .CGM
<input type="checkbox"/> Targa	<input type="checkbox"/> .FLI
<input type="checkbox"/> .BMP	<input type="checkbox"/> .DXF
<input type="checkbox"/> .TIFF	<input type="checkbox"/> .AVC
<input type="checkbox"/> .GIF	<input type="checkbox"/> .CEL
<input type="checkbox"/> .RIFF	
<input type="checkbox"/> Director	

- ☐ 2-D
- ☐ 3-D
- ☐ Sprites
- ☐ Cell Animation
- ☐ Frame Animation
- ☐ Paths
- ☐ Imports Animations
- ☐ Tweening of Shapes
- ☐ Tweening of Movement
- ☐ Effects with Animation
- ☐ Transition Effects

- ☐ Videodisc
- ☐ VCR
- ☐ CD-ROM
- ☐ Video Digitizer
- ☐ Audio
- ☐ Full Motion Video Board
- ☐ SoundBlaster
- ☐ MIDI

Comments	
-----------------	--

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Video Modes	
Max Colors	
ed Video Card	
Hard Disk	
RAM	
Minimum CPU	
nmended CPU	
mouse	
ware Required	

<p>1. <i>What is the purpose of this study?</i></p> <p>2. <i>What are the research questions?</i></p> <p>3. <i>What is the significance of the study?</i></p> <p>4. <i>What are the limitations of the study?</i></p> <p>5. <i>What are the conclusions?</i></p>	<p>6. <i>What are the implications of the study?</i></p> <p>7. <i>What are the future research directions?</i></p> <p>8. <i>What are the contributions of the study?</i></p> <p>9. <i>What are the strengths of the study?</i></p> <p>10. <i>What are the weaknesses of the study?</i></p>
--	--

<input type="radio"/> Available

Run Time Rights
Size
System Load

--	--

overall	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name

Version

Company

Phone Number

Price

Upgrade Price

Release Date

Classification

New Features

3.0 DDE, DLL
animation scripts, bitmapped images, Windows
meta file, Pagemaker
4.0 New Interface, New toolkits, MDI. Includes
6 licenses and 4 days training.

Comments

icon based authoring
Good for pre-planned videodisc based
learning applications. Difficult to change
structure of your flow charts once they are
defined.

File Import Types

- | | |
|--|----------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input checked="" type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macinto |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|-----------------------------------|-------------------------------|
| <input type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input type="checkbox"/> .TIFF | <input type="checkbox"/> AVC |
| <input type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|---|
| <input checked="" type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input checked="" type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input type="checkbox"/> Transition Effects |

External Device Support

- | |
|---|
| <input checked="" type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input checked="" type="checkbox"/> Audio |
| <input checked="" type="checkbox"/> Full Motion Video Board |
| <input type="checkbox"/> SoundBlaster |
| <input type="checkbox"/> MIDI |

Comments

External Control ☒ DLL's ☐ Linking Code ☐ DOS driver ☒ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	<input type="text"/>
Max Colors	<input type="text"/>
Recommended Video Card	<input type="text"/>
Hard Disk	<input type="text"/>
RAM	<input type="text"/>
Minimum CPU	<input type="text"/>
Recommended CPU	<input type="text"/>
mouse	<input type="text"/>
Other Hardware Required	<input type="text"/>

Software Requirements

Play back Module

<input type="radio"/> Available	
Run Time Rights	<input type="text"/>
Size	<input type="text"/>
System Load	<input type="text"/>

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name Knowledge Pro
Company Knowledge Garden
Price \$695 Upgrade Price

Version
Phone Number
Release Date

Classification Hyper Based

New Features

similar to Toolbook

Comments

Application Development (Expert System Tradition)
event driven, message based, object orientated language

File Import Types

- ☐ .PCX ☐ .CGM
- ☐ Targa ☐ .FLI
- ☐ .BMP ☐ .DXF
- ☐ .TIFF ☐ AVC
- ☐ .GIF ☐ .CEL
- ☐ .RIFF ☐ Macinto
- ☐ Director

File Export Types

- ☐ .PCX ☐ .CGM
- ☐ Targa ☐ .FLI
- ☐ .BMP ☐ .DXF
- ☐ .TIFF ☐ AVC
- ☐ .GIF ☐ .CEL
- ☐ .RIFF
- ☐ Director

Animation Features

- ☐ 2-D
- ☐ 3-D
- ☐ Sprites
- ☐ Cell Animation
- ☐ Frame Animation
- ☐ Paths
- ☐ Imports Animations
- ☐ Tweening of Shapes
- ☐ Tweening of Movement
- ☐ Effects with Animation
- ☐ Transition Effects

External Device Support

- ☐ Videodisc
- ☐ VCR
- ☐ CD-ROM
- ☐ Video Digitizer
- ☐ Audio
- ☐ Full Motion Video Board
- ☐ SoundBlaster
- ☐ MIDI

Comments

External Control ☒ DLL's ☒ Linking Code ☐ DOS driver ☒ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes
Max Colors
Recommended Video Card
Hard Disk
RAM
Minimum CPU
Recommended CPU
mouse
Other Hardware Required

Software Requirements

Windows

Play back Module

☒ Available
Run Time Rights free
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
speed	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name Version
 Company Phone Number
 Price Upgrade Price Release Date

Classification

New Features

New support for DDE and DLL's. Faster.

Comments

Not as flexible as Toolbook. Imports Hypercard stack with Mac version. Also available as Oracle Card, which is Plus with Oracle SQL extensions.

File Import Types

☐ .PCX ☐ .CGM
☐ Targa ☐ .FLI
☐ .BMP ☐ .DXF
☐ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF ☐ Macinto
☐ Director

File Export Types

☐ .PCX ☐ .CGM
☐ Targa ☐ .FLI
☐ .BMP ☐ .DXF
☐ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF
☐ Director

Animation Features

☐ 2-D
☐ 3-D
☐ Sprites
☐ Cell Animation
☐ Frame Animation
☐ Paths
☐ Imports Animations
☐ Tweening of Shapes
☐ Tweening of Movement
☐ Effects with Animation
☐ Transition Effects

External Device Support

☐ Videodisc
☐ VCR
☐ CD-ROM
☐ Video Digitizer
☐ Audio
☐ Full Motion Video Board
☐ SoundBlaster
☐ MIDI

Comments

External Control ☒ DLL's ☐ Linking Code ☐ DOS driver ☒ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes
 Max Colors
 Recommended Video Card
 Hard Disk
 RAM
 Minimum CPU
 Recommended CPU
 mouse
 Other Hardware Required

Software Requirements

Play back Module

☒ Available
 Run Time Rights free but costs \$495
 Size
 System Load

Customer Support

Ratings

overall	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name
Company
Price Upgrade Price

Version
Phone Number
Release Date

Classification

New Features

Comments

low-end presentations
modify and create animated sequences

File Import Types

- | | |
|---|--|
| <input checked="" type="checkbox"/> .PCX | <input checked="" type="checkbox"/> .CGM |
| <input checked="" type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input checked="" type="checkbox"/> AVC |
| <input checked="" type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | <input type="checkbox"/> Macintosh |
| <input type="checkbox"/> Director | |

File Export Types

- | | |
|---|---|
| <input checked="" type="checkbox"/> .PCX | <input type="checkbox"/> .CGM |
| <input type="checkbox"/> Targa | <input type="checkbox"/> .FLI |
| <input type="checkbox"/> .BMP | <input type="checkbox"/> .DXF |
| <input checked="" type="checkbox"/> .TIFF | <input checked="" type="checkbox"/> AVC |
| <input checked="" type="checkbox"/> .GIF | <input type="checkbox"/> .CEL |
| <input type="checkbox"/> .RIFF | |
| <input type="checkbox"/> Director | |

Animation Features

- | |
|---|
| <input checked="" type="checkbox"/> 2-D |
| <input type="checkbox"/> 3-D |
| <input checked="" type="checkbox"/> Sprites |
| <input type="checkbox"/> Cell Animation |
| <input type="checkbox"/> Frame Animation |
| <input type="checkbox"/> Paths |
| <input type="checkbox"/> Imports Animations |
| <input type="checkbox"/> Tweening of Shapes |
| <input type="checkbox"/> Tweening of Movement |
| <input type="checkbox"/> Effects with Animation |
| <input type="checkbox"/> Transition Effects |

External Device Support

- | |
|---|
| <input checked="" type="checkbox"/> Videodisc |
| <input type="checkbox"/> VCR |
| <input type="checkbox"/> CD-ROM |
| <input type="checkbox"/> Video Digitizer |
| <input type="checkbox"/> Audio |
| <input checked="" type="checkbox"/> Full Motion Video Board |
| <input checked="" type="checkbox"/> SoundBlaster |
| <input checked="" type="checkbox"/> MIDI |

Comments

External Control ☐ DLL's ☐ Linking Code ☐ DOS driver ☐ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	VGA
Max Colors	
Recommended Video Card	
Hard Disk	
RAM	
Minimum CPU	
Recommended CPU	
mouse	
Other Hardware Required	note: corrupts Targa to 256 colors

Software Requirements

Play back Module

<input type="radio"/> Available
Run Time Rights
Size
System Load

Customer Support

Ratings

overall	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor

Name Version
 Company Phone Number
 Price Upgrade Price Release Date

Classification

New Features

60 plus multimedia extensions for MM Windows
 Direct import graphics in several formats.
 Support for large bitmaps. Improved DDE.
 Pushbuttons and Dialog Boxes. Windows
 message translation.

Comments

Very flexible. Open ended with DLL features.

File Import Types

☐ .PCX ☒ .CGM
☐ Targa ☐ .FLI
☒ .BMP ☐ .DXF
☒ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF ☐ Macinto
☐ Director

File Export Types

☐ .PCX ☐ .CGM
☐ Targa ☐ .FLI
☐ .BMP ☐ .DXF
☐ .TIFF ☐ AVC
☐ .GIF ☐ .CEL
☐ .RIFF
☐ Director

Animation Features

☐ 2-D
☐ 3-D
☐ Sprites
☐ Cell Animation
☐ Frame Animation
☐ Paths
☐ Imports Animations
☐ Tweening of Shapes
☐ Tweening of Movement
☐ Effects with Animation
☐ Transition Effects

External Device Support

☒ Videodisc
☐ VCR
☐ CD-ROM
☐ Video Digitizer
☐ Audio
☒ Full Motion Video Board
☐ SoundBlaster
☐ MIDI

Comments

External Control ☒ DLL's ☐ Linking Code ☐ DOS driver ☒ DDE's

File Sizes

Modules

Hardware Requirements

Video Modes	Windows VGA
Max Colors	256
Recommended Video Card	
Hard Disk	
RAM	1.5 meg
Minimum CPU	286
Recommended CPU	386
mouse	yes
Other Hardware Required	

Software Requirements

Windows 3.0

Play back Module

	<input checked="" type="radio"/> Available
Run Time Rights	\$500 for unlimited
Size	
System Load	

Customer Support

Free for 90 days. 900
 number or support
 agreement. Excellent
 BBS for users.

Ratings

overall	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
easy tasks	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
advanced tasks	<input checked="" type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor
authoring	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
animation	<input type="radio"/> Excellent	<input type="radio"/> Good	<input type="radio"/> Fair	<input checked="" type="radio"/> Poor
speed	<input type="radio"/> Excellent	<input type="radio"/> Good	<input checked="" type="radio"/> Fair	<input type="radio"/> Poor
support	<input type="radio"/> Excellent	<input checked="" type="radio"/> Good	<input type="radio"/> Fair	<input type="radio"/> Poor