Project #: B-10-F13
Center #: 10/24-6-R7190-0A0
Contract#: AGMT DTD 910429
Prime #: 

Subprojects ?: N
Main project #: 

Project unit: OIP
Project director(s): DYER F B

Sponsor/division names: NCR
Sponsor/division codes: 263
Award period: 910429 to 910829 (performance) 910829 (reports)

Sponsor amount:
Contract value 20,522.00
Funded 20,522.00
Cost sharing amount 0.00

Does subcontracting plan apply ?: N

Title: PC ANIMATION INVESTIGATIONS

PROJECT ADMINISTRATION DATA

OCA contact: Don S. Hasty 894-4620
Sponsor technical contact MICHAEL HARRIS (404)853-2937
Sponsor issuing office K. C. BURGESS YAKEMOVIC (404)853-2937
NCR CORPORATION HUMAN INTERFACE TECHNOLOGY CENTER NCR CORPORATION
500 TECH PARKWAY 500 TECH PARKWAY
ATLANTA, GA 30316 ATLANTA, GA 30316

Security class (U,C,S,TS) : U
Defense priority rating : N/A
Equipment title vests with: Sponsor X

Administrative comments - INITIATION OF PROJECT
GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION
NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 11/18/91

Project No. B-10-F13
Project Director DYER F B
Sponsor NCR/ATLANTA, GA

Contract/Grant No. AGMT DTD 910429
Prime Contract No. 

Title PC ANIMATION INVESTIGATIONS

Effective Completion Date 910829 (Performance) 910829 (Reports)

Closeout Actions Required:

Final Invoice or Copy of Final Invoice Y N Submitted
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 Y
Reports Coordinator (OCA) Y
GTRC Y
Project File Y
Other N

Date Submitted
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 in 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.
<table>
<thead>
<tr>
<th>Name</th>
<th>I3D Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>Autodesk</td>
</tr>
<tr>
<td>Price</td>
<td>$2,995</td>
</tr>
<tr>
<td>Upgrade Price</td>
<td></td>
</tr>
<tr>
<td>Release Date</td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td>animation</td>
</tr>
</tbody>
</table>

### New Features
- 3D renderer
- mid-line animator
- Playback through Animator Pro

### File Import Types
- .PCX
- .Targa
- .BMP
- .TIFF
- .RIFF
- Director

### File Export Types
- .PCX
- .Targa
- .BMP
- .TIFF
- .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

### Modules
- 2D Shaper
- 3D Lofter
- 3D Editor
- Materials Editor

### Hardware Requirements

<table>
<thead>
<tr>
<th>Video Modes</th>
<th>VGA</th>
<th>Display Indep.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Colors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Video Card</td>
<td>TARGA</td>
<td></td>
</tr>
<tr>
<td>Hard Disk</td>
<td>20 meg</td>
<td></td>
</tr>
<tr>
<td>RAM</td>
<td>3 meg</td>
<td></td>
</tr>
<tr>
<td>Minimum CPU</td>
<td>386 w/387</td>
<td></td>
</tr>
<tr>
<td>Recommended CPU</td>
<td>486</td>
<td></td>
</tr>
</tbody>
</table>

### Software Requirements

### Play back Module
- Available

### System Load

### Ratings

<table>
<thead>
<tr>
<th>overall</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>easy tasks</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>advanced tasks</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>authoring</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>animation</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>speed support</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
</tbody>
</table>
**Name** Action!

**Company** Macromind

**Price** $495

**Classification** Multimedia Presentations

**Version** 1.0

**Phone Number** (415) 442-0200

**Release Date** Fall 91

**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

- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .RIFF
- Director

### File Export Types

- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .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
- Sound Blaster
- MIDI

---

### File Sizes

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

### Hardware Requirements

- **Video Modes** VGA
- **Max Colors** 16M
- **Recommended Video Card** None
- **Hard Disk** 2Mb
- **Minimum CPU** 286
- **Recommended CPU** 386 or 486
- **RAM** None

### Software Requirements

- **System Load** None
- **Run Time Rights** None
- **Size** None

### Customer Support

- **Overall Ratings**
  - easy tasks
  - advanced tasks
  - authoring
  - animation
  - speed
  - support

### Play back Module

- **Overall**
  - Excellent
  - Good
  - Fair
  - Poor

---

### Modules

- None

---

### Comments

- None
**Ask Me 2000 Professional**

**Company:** Innovation Communication Systems, Inc. (ICS)

**Price:** $1,795  
**Upgrade Price:**

**Release Date:**

**Classification:** animation

**New Features:**

**File Import Types:**
- .PCX  
- Targa  
- .BMP  
- .TIFF  
- .GIF  
- .RIFF  
- Director

**File Export Types:**
- .PCX  
- Targa  
- .BMP  
- .TIFF  
- .GIF  
- .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:**
Ask-Me 2000 is available. Low end, cheap. No support for Video.

**External Control:**  
- DLL’s  
- Linking Code  
- DOS driver  
- DDE’s

**File Sizes:**

**Hardware Requirements:**

**Software Requirements:**

**Play back Module:**
- Available

**Run Time Rights:**

**System Load:**

**Ratings:**

- Overall
- Easy tasks
- Advanced tasks
- Authoring
- Animation
- Speed
- Support
<table>
<thead>
<tr>
<th>Name</th>
<th>Authorware Professional</th>
<th>Company</th>
<th>Authorware, Inc.</th>
<th>Version</th>
<th>windows version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td></td>
<td>Phone Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td></td>
<td>Release Date</td>
<td>first half '91</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New Features**

- support windows 3.0 extensions

**Comments**

- Very Expensive

**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

**External Control**

- DLL's
- Linking Code
- DOS driver
- DDE's

**File Sizes**

- 

**Hardware Requirements**

<table>
<thead>
<tr>
<th>Video Modes</th>
<th>Max Colors</th>
<th>Recommended Video Card</th>
<th>Hard Disk</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Software Requirements**

**Play back Module**

- Available

**Run Time Rights**

- Size

**System Load**

- 

**Ratings**

<table>
<thead>
<tr>
<th>overall</th>
<th>easy tasks</th>
<th>advanced tasks</th>
<th>authoring</th>
<th>animation</th>
<th>speed</th>
<th>support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
<td>Excellent</td>
<td>Good</td>
<td>Poor</td>
</tr>
</tbody>
</table>

**Modules**

- 

**Customer Support**

- 

**External Device Support**

- IBI
- Videodisc
- PVCR
- DCD-ROM
- Video Digitizer
- Audio
- Full Motion Video Board
- SoundBlaster
- MIDI
### Name
DeluxePaint Animation

### Company

### Price
$135

### Upgrade Price

### Release Date

### Version
1.0

### Phone Number
(800) 245-4525

### 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
- SoundBlaster
- MIDI

#### Hardware Requirements

<table>
<thead>
<tr>
<th>Video Modes</th>
<th>320 x 200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Colors</td>
<td>256</td>
</tr>
<tr>
<td>Recommended Video Card</td>
<td></td>
</tr>
<tr>
<td>Hard Disk</td>
<td>5 meg</td>
</tr>
<tr>
<td>RAM</td>
<td>640K</td>
</tr>
<tr>
<td>Minimum CPU</td>
<td></td>
</tr>
<tr>
<td>Recommended CPU</td>
<td></td>
</tr>
<tr>
<td>mouse</td>
<td>yes</td>
</tr>
<tr>
<td>Other Hardware Required</td>
<td></td>
</tr>
</tbody>
</table>

#### Software Requirements

#### Customer Support

#### Ratings

- **overall**: Excellent, Good, Fair, Poor
- **easy tasks**: Excellent, Good, Fair, Poor
- **advanced tasks**: Excellent, Good, Fair, Poor
- **authoring**: Excellent, Good, Fair, Poor
- **animation**: Excellent, Good, Fair, Poor
- **speed**: Excellent, Good, Fair, Poor
- **support**: Excellent, Good, Fair, Poor
**Name**: Director  
**Company**: Macromind  
**Price**: $999  
**Version**: new  
**Phone Number**:  
**Release Date**: end '91 ??  
**Classification**: animation/authoring

### New Features

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

### File Import Types
- PCX
- CGM
- Targa
- FLI
- BMP
- DXF
- TIFF
- AVI
- GIF
- CEL
- RIFF
- Director
- Macint

### File Export Types
- PCX
- CGM
- Targa
- FLI
- BMP
- DXF
- AVI
- 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

### Hardware Requirements
- Video Modes
- Max Colors
- Recommended Video Card
- Hard Disk
- RAM
- Minimum CPU
- Recommended CPU
- Other Hardware Required

### Software Requirements

### Customer Support

### Play back Module
- Available
- Run Time Rights
- Size
- System Load

### Ratings
- overall easy tasks
- advanced tasks
- authoring animation
- speed support

<table>
<thead>
<tr>
<th></th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>easy tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>advanced tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>authoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>animation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>speed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name: Grasp</td>
<td>Version: 4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company: animation/authoring</td>
<td>Phone Number: (800) 523-0258</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price:</td>
<td>Upgrade Price: $349</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Release Date:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Classification: **

**New Features: **

**Comments: **

### File Import Types
- .PCX
- .CGM
- Targa
- .FLI
- .BMP
- .DXF
- .TIFF
- .AVC
- .GIF
- .CEL
- .RIFF
- Macintosh
- 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

### External Control
- DLL's
- Linking Code
- DOS driver
- DDE's

### File Sizes

### Hardware Requirements
- Video Modes: up to 1,280 X 1,024
- Max Colors: 256
- Recommended Video Card: [ ]
- Hard Disk: [ ]
- RAM: [ ]
- Minimum CPU: [ ]
- Recommended CPU: [ ]
- Other Hardware Required: [ ]

### Software Requirements

### Run Time Rights
- Available

### System Load

### Customer Support

### Playback Module

### Ratings
- Overall: Excellent
- Easy Tasks: Excellent
- Advanced Tasks: Excellent
- Authoring: Excellent
- Animation: Excellent
- Speed: Excellent
- Support: Excellent
Name: Hame
Company: Owl International
Price: $500

New Features:
- Embed animations with audio and music

Comments:
- Older version was:
  - Good for text intensive apps with simple graphics, audio, and video.
  - Inadequate for animation, video, hi-res.

File Import Types:
- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .RIFF
- Director

File Export Types:
- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .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

Hardware Requirements:
- Video Modes
- Max Colors
- Recommended Video Card
- Hard Disk
- RAM
- Minimum CPU
- Recommended CPU
- Mouse
- Other Hardware Required

Software Requirements:
- Overall
- Easy Tasks
- Advanced Tasks
- Authoring
- Animation
- Speed
- Support

Run Time Rights
- Available
- Size
- System Load

Ratings:
- Overall: Excellent Good Fair Poor
- Easy Tasks: Excellent Good Fair Poor
- Advanced Tasks: Excellent Good Fair Poor
- Authoring: Excellent Good Fair Poor
- Animation: Excellent Good Fair Poor
- Speed: Excellent Good Fair Poor
- Support: Excellent Good Fair Poor

Customer Support

External Control:
- DLL's
- Linking Code
- DOS driver
- DDE's

File Sizes

Modules

Playback Module
Name: Icon Animate
Company: Aimtech Corp.
Price: 
Upgrade Price: 
Version: 3.0
Phone Number: (603) 883-0220
Release Date: 
Classification: animation

New Features: 
Comments: 

File Import Types: 
- .PCX
- .Targa
- .BMP
- .TIFF
- .RIFF
- Director

File Export Types: 
- .PCX
- .Targa
- .BMP
- .TIFF
- .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

External Control: 
- DLL's
- Linking Code
- DOS driver
- DDE's

File Sizes: 

Hardware Requirements: 

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

Software Requirements: 

Customer Support: 

Play back Module: 
- Available

Run Time Rights: 
Size: 
System Load: 

Ratings: 
- Excellent
- Good
- Fair
- Poor

overall easy tasks
advanced tasks
authoring
animation
speed
support

Comments: 

Modules: 

Overall
- Excellent
- Good
- Fair
- Poor

Easy Tasks
- Excellent
- Good
- Fair
- Poor

Advanced Tasks
- Excellent
- Good
- Fair
- Poor

Authoring
- Excellent
- Good
- Fair
- Poor

Animation
- Excellent
- Good
- Fair
- Poor

Speed
- Excellent
- Good
- Fair
- Poor

Support
- Excellent
- Good
- Fair
- Poor
Name: Icon Author
Company: Aimtech Corp.
Price: $4,995
Version: 4.0
Phone Number: (603) 883-0220

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
- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .RIFF
- Director

File Export Types
- .PCX
- Targa
- .BMP
- .TIFF
- .GIF
- .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

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

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

Software Requirements

Customer Support

Modules

File Sizes

Play back Module
- Available

Run Time Rights
- Size
- System Load

Ratings
- Excellent
- Good
- Fair
- Poor

overall
easy tasks
advanced tasks
authoring
animation
speed
support
Name: Knowledge Pro
Company: Knowledge Garden
Price: $695
Upgrade Price: 
Release Date: 
Classification: Hyper Based

New Features
- Similar to Toolbook

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

File Import Types:
- .PCX
- .Targa
- .BMP
- .TIFF
- .GIF
- .RIFF
- Director

File Export Types:
- .PCX
- .Targa
- .BMP
- .TIFF
- .GIF
- .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 Control
- DLL's
- Linking Code
- DOS driver
- DDE's

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

System Load

Customer Support

Ratings
- Overall: Excellent
- Easy Tasks: Good
- Advanced Tasks: Fair
- Authoring: Poor
- Animation: Excellent
- Speed: Good
- Support: Fair

Modules

File Sizes

External Device Support
- Videodisc
- VCR
- CD-ROM
- Video Digitizer
- Audio
- Full Motion Video Board
- SoundBlaster
- MIDI

Comments

Module

External Control

File Sizes

Hardware Requirements

Software Requirements

Play Back Module

Ratings

External Device Support

Customer Support
<table>
<thead>
<tr>
<th>New Features</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>New support for DDE and DLL's. Faster.</td>
<td>Not as flexible as Toolbook. Imports Hypercard stack with Mac version. Also available as Oracle Card, which is Plus with Oracle SQL extensions.</td>
</tr>
</tbody>
</table>

### File Import Types
- .PCX
- Targa
- .BMP
- .TIFF
- .FLI
- .GIF
- .RIFF
- Director

### File Export Types
- .PCX
- Targa
- .BMP
- .TIFF
- .FLI
- .GIF
- .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

### External Control
- DLL's
- Linking Code
- DOS driver
- DDE's

### 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

### Ratings
- overall
- easy tasks
- advanced tasks
- authoring
- animation
- speed
- support
- Excellent
- Good
- Fair
- Poor
Name: Storyboard Live!
Company: IBM
Price: $500
Upgrade Price: $120

New Features:
- low-end presentations
- modify and create animated sequences

File Import Types:
- .PCX
- .Targa
- .BMP
- .TIFF
- .GIF
- .RIFF
- .Director
- Macintosh

File Export Types:
- .PCX
- .Targa
- .BMP
- .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
- Audio
- Video Digitizer
- Full Motion Video Board
- SoundBlaster
- MIDI

Comments:
- VideoLogic DVA-4000 Motion M

Modules:
- Story Editor
- Story Teller
- Picture Maker
- Picture Taker

Software Requirements:
- Play back Module
  - Available
  - Run Time Rights
  - Size
  - System Load

Ratings:
- Overall: Excellent, Good, Fair, Poor
- Easy Tasks: Excellent, Good, Fair, Poor
- Advanced Tasks: Excellent, Good, Fair, Poor
- Authoring: Excellent, Good, Fair, Poor
- Animation: Excellent, Good, Fair, Poor
- Speed: Excellent, Good, Fair, Poor
- Support: Excellent, Good, Fair, Poor

Customer Support:

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

External Control:
- DLL's
- Linking Code
- DOS driver
- DDE's
**Name**: Toolkit  
**Company**: Asymetrix  
**Price**: $300  
**Upgrade Price**: $75  
**Release Date**: June 1991

**New Features**
- 60 plus multimedia extensions for MM Windows
- Direct import graphics in several formats
- Support for large bitmaps. Improved DDE.

**Comments**
Very flexible. Open ended with DLL features.

<table>
<thead>
<tr>
<th>File Import Types</th>
<th>File Export Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>.PCX</td>
<td>.PCX</td>
</tr>
<tr>
<td>Targa</td>
<td>Targa</td>
</tr>
<tr>
<td>.BMP</td>
<td>.BMP</td>
</tr>
<tr>
<td>.TIFF</td>
<td>.TIFF</td>
</tr>
<tr>
<td>.GIF</td>
<td>.GIF</td>
</tr>
<tr>
<td>.RIFF</td>
<td>.RIFF</td>
</tr>
<tr>
<td>Director</td>
<td>Director</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Animation Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-D</td>
</tr>
<tr>
<td>3-D</td>
</tr>
<tr>
<td>Sprites</td>
</tr>
<tr>
<td>Cell Animation</td>
</tr>
<tr>
<td>Frame Animation</td>
</tr>
<tr>
<td>Paths</td>
</tr>
<tr>
<td>Imports Animations</td>
</tr>
<tr>
<td>Tweening of Shapes</td>
</tr>
<tr>
<td>Tweening of Movement</td>
</tr>
<tr>
<td>Effects with Animation</td>
</tr>
<tr>
<td>Transition Effects</td>
</tr>
</tbody>
</table>

**External Device Support**
- Videodisc
- VCR
- CD-ROM
- Video Digitizer
- Audio
- Full Motion Video Board
- SoundBlaster
- MIDI

**External Control**
- DLL's
- Linking Code
- DOS driver
- DDE's

**File Sizes**

**Hardware Requirements**

**Video Modes**
- Windows VGA

Max Colors: 256  
Recommended Video Card:  
Hard Disk:  
RAM: 15 meg  
Minimum CPU: 286  
Recommended CPU: 386  
Mouse: yes  
Other Hardware Required:  

**Software Requirements**
- Windows 3.0

**Run Time Rights**
- $500 for unlimited

**Play back Module**
- Available

**Modules**

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

**Ratings**

overall easy tasks advanced tasks authoring animation speed support

Excellent | Good | Fair | Poor
---|---|---|---
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor
Excellent | Good | Fair | Poor