



Motion Works MediaShop™ : Interactive Video

Interactive Video (Hot Spot Video) is a software tool that adds interactivity to Video for Windows movie files. This tool consists of two components:

- 1) a Visual Basic Custom Control, called the *Interactive Video Control* (IAVI.VBX).
- 2) a stand-alone interactive video editor called the *Interactive Video Tool* (IAVIEDIT.EXE) that is used to specify Hot Rectangles for each frame of the movie that the interactive object is visible.

To learn how to use help, press F1.

Contacting Motion Works

Interactive Video Control

Interactive Video Tool

Contacting Motion Works

If you have any questions, comments, or suggestions, Motion Works would like to hear from you. You can contact Motion Works at:

**Motion Works USA,
524 Second Street, San Francisco,
CA 94107,
U. S. A.**

Tel: 1-800-800-8476, Direct (415)-541-9333,
Fax: (415)-541-0555



Interactive Video Control

[Properties](#)

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Description

The Interactive Video Control is a Custom Visual Basic Control that allows the user to define objects within an Audio Visual Interleaved or AVI movie and interact with those objects using Visual Basic.



File Name

IAVI.VBX

Object Type

IAVI

Remarks

This control requires Interactivity Data File with extension .IVD. Also see the documentations on "Interactive Video Editor" for ways of creating interactivity data file.

Distribution Note When you create and distribute applications that use the Interactive Video Control, you should install the file IAVI.VBX in the customer's Microsoft Windows \SYSTEM subdirectory . The Visual Basic setup kit included with the Professional Edition provides tools to help you write setup programs that install your applications correctly.

PROPERTIES

There are a number of properties used to communicate between Interactive Animation and Visual Basic. The following is a list of all available properties for this control. Asterisk(*) denotes properties that apply to this control only or that require special consideration when used with it.

Properties

<u>*About</u>	Name
BackColor	TabIndex
BorderStyle	TabStop
Caption	Tag
<u>*DataName</u>	Top
DragIcon	Visible
DragMode	Width
Enabled	Height
<u>*FileName</u>	
Index	
Left	

RUN-TIME PROPERTIES

Run-time properties are hidden away from the general properties list but can be used inside the Visual Basic program. The following categories of run-time properties are designed to give user movie control.

Run-time movie properties

<u>*AddObjecRect</u>	<u>*Displayed</u>	<u>*MovieBottom</u>
<u>*AddObject</u>	<u>*EditMode</u>	<u>*MovieLeft</u>
<u>*Changed</u>	<u>*FrameObjCount</u>	<u>*MovieRight</u>
<u>*Cued</u>	<u>*ListFrameObjBottom</u>	<u>*MovieTop</u>
<u>*CurFrame</u>	<u>*ListFrameObjID</u>	<u>*ObjectCount</u>
<u>*CurObjectBottom</u>	<u>*ListFrameObjLeft</u>	<u>*Pause</u>
<u>*CurObjectCursor</u>	<u>*ListFrameObjRight</u>	<u>*Play</u>
<u>*CurObjectID</u>	<u>*ListFrameObjTop</u>	<u>*RunCursor</u>
<u>*CurObjectLeft</u>	<u>*ListObjectCursor</u>	<u>*Save</u>
<u>*CurObjectName</u>	<u>*ListObjectID</u>	<u>*SoundEnabled</u>
<u>*CurObjectRight</u>	<u>*ListObjectName</u>	
<u>*CurObjectTop</u>	<u>*Loop</u>	
<u>*DefaultCursor</u>	<u>*MaxFrame</u>	

EVENTS

The following is a list of all the available events for this control. Asterisk(*) denotes events that apply to this control only or that require special consideration when used with it.

Events

*Frame

*Load

*Unload

*ObjMouseDown

*ObjMouseUp

*ObjMouseMove

*ObjMouseClick

*Play

About Property

Description	Displays an About box for the control which contains the name of the control, version number and the author.
Visual Basic	Not Applicable
Remarks	This property can only be used during development time and is activated by double clicking on the About property field which displays "Click here..."
Data Type	Not Applicable

FileName Property

Description	Provides the path and name of the digital movie file (with .AVI extension) loaded currently. To invoke the "Open AVI file" dialog, simply double click the left mouse button on this property.
Visual Basic	[form.]IAVI.FileName[=filename\$]
Remarks	<p>The path of the .IVD file will also automatically appear under the "DataName" property once the .AVI movie is loaded. If the IVD file does not exist, then there is no interactivity defined for that digital movie.</p> <p>Setting this property will close the current digital movie and load the specified interactivity data file (IVD). Use "Interactive Video Editor" to define an interactivity file.</p>
Data Type	String

DataName Property

Description	Indicates the path and name of the interactivity data file (with extension .IVD). To invoke the "Open IVD file" dialog, simply double click the left mouse button on this property.
Visual Basic	[form.]IAVI.DataName[=filename\$]
Remarks	Setting this property will load the interactivity file for use with the current digital movie (see FileName property). If no objects or HotSpots (i.e. interactivities) are defined in an IVD file, this .IVD file will be destroyed upon termination of the program. Use "Interactive Video Editor" to define an interactivity file.
Data Type	String

CurFrame Property

Description	Indicates the current frame of the digital movie being displayed.
Visual Basic	[form.]IAVI.CurFrame[=setting]
Remarks	Setting this property will seek the digital movie to the specified frame. Also see the Event "Frame" of this IAVI control.
Data Type	Integer (LONG)

Play Property

Description Indicates if the digital movie is playing.

Visual Basic [form.]IAVI.Play[=setting]

Remarks Setting this property will either start and stop the movie.

Setting	Description
TRUE	Play
FALSE	(Default) Stop.

Data Type Integer (Boolean)

Pause Property

Description Indicates if the digital movie is currently paused.

Visual Basic [form.]IAVI.Pause[=setting]

Remarks Setting this property will either pause and unpaue the movie.

Setting

TRUE
FALSE

Description

(Default) Indication to pause the movie.
Indication to unpaue the movie.

Data Type Integer (Boolean)

Displayed Property

Description	Indicates if the digital movie is currently displayed.
Visual Basic	[form.]IAVI.Displayed[=setting]
Remarks	Setting this property will hide and show the movie.
Data Type	Integer (Boolean)

Cued Property

Description	Indicates the condition of the cue for a digital movie.
Visual Basic	[form.]IAVI.Cued[=setting]
Remarks	This is a read-only property. Setting this property to TRUE will cue the selected digital movie for play-back.
Data Type	Integer (Boolean)

SoundEnabled Property

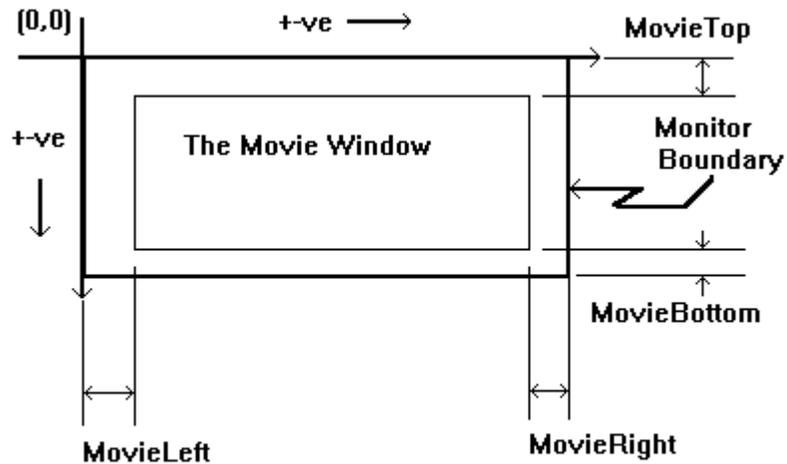
Description	Indicates if the digital movie will play any sound associated with the movie.
Visual Basic	[form.]IAVI.SoundEnabled[=setting]
Remarks	Setting this property will either enable or disable sound in the movie.
Data Type	Integer (Boolean)

MovieLeft Property

Description Specifies the left offset coordinate of the movie window (in pixels).

Visual Basic [form.]IAVI.MovieLeft[=setting]

Remarks Note that the "origin" of the monitor is located at the top left corner. Any length to the right of or underneath the corner is considered positive. Also see properties MovieTop, MovieRight and MovieBottom. The following sketch indicates the different offset assigned to each of these properties.



Data Type Integer

MovieTop Property

Description	Specifies the top offset coordinate of the movie window (in pixels).
Visual Basic	[form.]IAVI.MovieTop[=setting]
Remarks	See also MovieLeft property for the co-ordinates' convention of the monitor.
Data Type	Integer

MovieRight Property

Description	Specifies the right offset coordinate of the movie window (in pixels).
Visual Basic	[form.]IAVI.MovieTop[=setting]
Remarks	See also MovieLeft property for the co-ordinates' convention of the monitor.
Data Type	Integer

MovieBottom Property

Description	Specifies the bottom offset coordinate of the movie window (in pixels).
Visual Basic	[form.]IAVI.MovieBottom[=setting]
Remarks	See also MovieLeft property for the co-ordinates' convention of the monitor.
Data Type	Integer

MaxFrame Property

Description	Indicates the number of frames in the digital movie.
Visual Basic	[form.]IAVI.MaxFrame
Remarks	Since the internal program counter starts counting Frame number one at '0', the final number of frames stores in the program counter is MaxFrame - 1 not MaxFrame.
Data Type	Integer (LONG)

EditMode Property

Description Indicates if the IAVI control is in edit mode where the interactivity data can be edited.

Visual Basic [form.]IAVI.EditMode

Remarks	Setting	Description
	TRUE	(Default) Activate EditMode.
	FALSE	Deactivate EditMode

Data Type Integer(Boolean)

ObjectCount Property

Description	Indicates the number of objects defined for this digital movie.
Visual Basic	[form.]IAVI.ObjectCount
Remarks	Since the first object is counted as '0' in the program counter, the last object is actually ObjectCount - 1 not ObjectCount. See also ListObjectID, ListObjectName and ListObjectCursor.
Data Type	Integer

Changed and Save Properties

The following two properties are used for file management.

<u>Property Name</u>	Type	Description
Changed	integer (Boolean)	Indicates if there are any changes in the data maintained by the IAVI control. This property can only be changed from FALSE to TRUE under Visual Basic control. Setting the Save property (below) to TRUE will clear this property to FALSE.
Save	integer (Boolean)	This is a set-only property. Setting this property to TRUE will save the current interactivity data to the file. Saving the file will clear the Changed property to FALSE.

ListObjectID, ListObjectName and ListObjectCursor Properties

The following are array properties. Within Visual Basic, the array properties are accessed via the use of a subscript following the property name. For example, ListObjectName(5) would refer to the name of the 5th object name in the current movie. See also ObjectCount.

<u>Property Name</u>	Type	Description
ListObjectID	integer	This is an array property that contain all the object IDs of objects in the interactivity data.
ListObjectName	string	This is an array property that contain all the object names of objects in the interactivity data.
ListObjectCursor	integer	This is an array property that contain all the object cursor IDs of objects in the interactivity data.

Related Topic:

[Relationship between ListObject..., CurObject... and ListFranmeObj... properties](#)

CurObjectID, CurObjectName, CurObjectCursor, CurObjectTop, CurObjectLeft, CurObjectRight, CurObjectBottom, DrawCurObjectRect, AddObject and AddObjectRect Properties

The following properties allow users to access the current object information in the Interactivity Video file via the Interactive Video Control. Together with AddObject and AddObjectRect properties, the user can add or delete objects in the interactivity files.

Property Name	Type	Description
CurObjectID	integer	A property used for holding the ID of an object while information is being sent to or received from the IAVI control.
CurObjectName	string	A property used for holding the name of an object while information is being sent to or received from the IAVI control.
CurObjectCursor	integer	A property used for holding the cursor ID of an object while information is being sent to or received from the IAVI control.
CurObjectLeft	integer	A property used for holding the left rectangle coordinate of an object while information is being sent to or received from the IAVI control.
CurObjectTop	integer	A property used for holding the top rectangle coordinate of an object while information is being sent to or received from the IAVI control.
CurObjectRight	integer	A property used for holding the right rectangle coordinate of an object while information is being sent to or received from the IAVI control.
CurObjectBottom	integer	A property used for holding the bottom rectangle coordinate of an object while information is being sent to or received from the IAVI control.
AddObject	integer (Boolean)	This is a set-only property. Setting this property to TRUE will add the object specified by CurObjectID, CurObjectName, and CurObjectCursor to the object list of the movie's interactivity data. Setting this property to FALSE will delete the object with the ID specified by CurObjectID.
AddObjectRect	integer (Boolean)	This is a set-only property. Setting this property to TRUE will add the object rectangle to the current frame's interactivity data specified by CurObjectID, CurObjectLeft, CurObjectTop, CurObjectRight and CurObjectBottom. Setting this property to FALSE will delete the frame's object rectangle

specified with the ID specified by CurObjectID.

DrawCurObjectRect

integer
(Boolean)

This is a set-only property. Setting this property to TRUE will draw the object rectangle to the current frame's interactivity data specified by CurObjectID, CurObjectLeft, CurObjectTop, CurObjectRight and CurObjectBottom. Setting this property to FALSE will not draw the frame's object rectangle specified with the ID specified by CurObjectID.

Related Topic:

[Relationship between ListObject..., CurObject... and ListFrameObj... properties](#)

FrameObjCount Property

Description	Indicates the number of objects defined in the current frame of the movie.
Visual Basic	[form.]IAVI.FrameObjCount
Remarks	Since the internal program counter starts counting the first object at '0', the final number of objects stores in the program counter is FrameObjCount - 1 not FrameObjCount.
Data Type	Integer (LONG)

ListFrameObjID, ListFrameObjLeft, ListFrameObjTop, ListFrameObjRight and ListFrameObjBottom Properties

The following properties allow users to manipulate the object information in a frame of the Interactivity file via the Interactive Video Control. The following are array properties meaning that they require subscripts to gain information access. For example, ListFrameObjID(3) indicates the use of the third object ID of the current frame.

<u>Property Name</u>	Type	Description
ListFrameObjID	integer	This is an array property that lists the Objects that are defined for the current frame of the movie.
ListFrameObjLeft	integer	This is an array property that contains all the objects of the current frame's left rectangle coordinate.
ListFrameObjTop	integer	This is an array property that contains all the objects of the current frame's top rectangle coordinate.
ListFrameObjRight	integer	This is an array property that contains all the objects of the current frame's right rectangle coordinate.
ListFrameObjBottom	integer	This is an array property that contains all the objects of the current frame's bottom rectangle coordinate.

Related Topic:

[Relationship between ListObject..., CurObject... and ListFrameObj... properties](#)

Loop Property

Description Indicates if the movie will loop to the beginning when the last frame is reached.

Visual Basic [form.]IAVI.Loop[=setting]

Remarks Setting this property will change the looping behaviour of the movie.

Setting

TRUE
FALSE

Description

Re-start the movie once the end is reached.
(Default) Stop the movie once the end is reached.

Data Type Integer (Boolean)

RunCursor and DefaultCursor Properties

The following two properties are used for cursor status.

Property Name	Type	Description
RunCursor	integer	Indicates the cursor that is to be used when the movie is being played. The following is a list of the available cursors and their IDs:

List of Built-In Cursors:

	Cursor Resource Name	Logical Cursor Number	Windows Built-In Cursors Label Name
	FINGER_CURSOR		
	HAND_CURSOR		
	HANDUP_CURSOR	1	
	HANDLEFT_CURSOR	2	
	HANDRGHT_CURSOR	3	
	HANDWALK_CURSOR	4	
	HANDGRAB_CURSOR	5	
	MAGNIFY_CURSOR	6	
	QUESTION_CURSOR	7	
	SOUND_CURSOR	8	
	10000 IDC_ARROW		
	10001 IDC_IBEAM		
	10002 IDC_WAIT		
	10004 IDC_UPARROW		
	10005 IDC_SIZE		
		10006	IDC_ICON
	10007 IDC_SIZENWSE		
	10008 IDC_SIZENESW		
	10009 IDC_SIZEWE		
	10010 IDC_SIZENS		

Property Name	Type	Description
DefaultCursor	integer	Specifies the cursor to be used if the cursor is over no defined object in the current frame of the movie. See also RunCursor.

Frame Event

Description Notifies Visual Basic that the current frame has changed.

Visual Basic **Sub IAVI_Frame ()**

Remarks Parameters: FrameNum As Integer

Visual Basic Example The following codes will play an .AVI movie and display the current frame number on label1 at real time.

```
Sub IAVI1_Frame (FrameNum As
Long)
    IAVI1.Play = True
    Label1.Caption = "Current Frame no.:" + IAVI1.CurFrame
End Sub
```

Load Event

Description Notifies Visual Basic that the current movie has been loaded. This indicates that the run-time variables are now valid.

Visual Basic **Sub /AVI_Load ()**

Remarks Parameters: None

Unload Event

Description Notifies Visual Basic that the current movie (if any) has been closed.
This indicates that the run-time variables are no longer valid.

Visual Basic **Sub /AVI_Unload ()**

Remarks Parameters: None

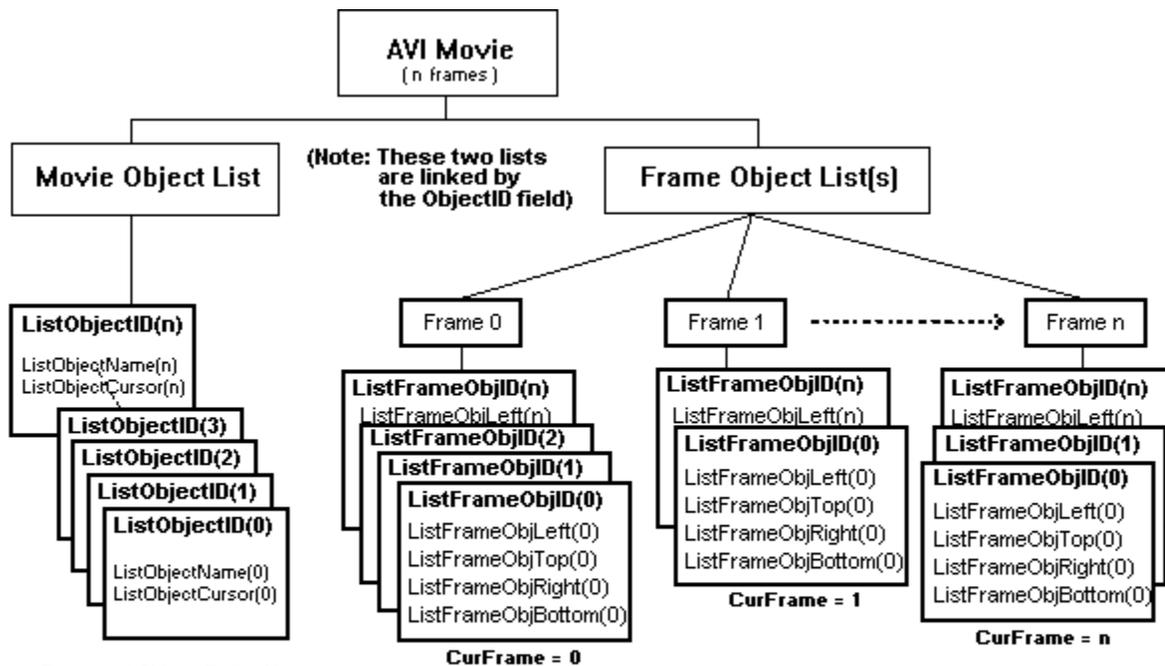
ObjMouseMove Event

Description Notifies Visual Basic that a mouse move was detected within the IAVI Control. The object's ID as well as the location of the mouse cursor is returned.

Visual Basic **Sub IAVI_ObjMouseMove ()**

Remarks Parameters: X As Integer, Y As Integer, ObjID As Integer
ObjName As Integer

Relationship between ListObject..., CurObject... and ListFrameObj... properties



The above diagram shows how ListObject... and ListFrameObj... properties are different from each other. CurObject... properties are used together with AddObject and AddObjecRec properties to add or delete objects in the interactivity files (essentially manipulating ObjectIDs which is unique to both Movie Object List and Frame Object List).

See Also...

[ListObject...](#)

[ListFrameObj...](#)

[CurObject...](#)



Interactive Video Tool

Description: The Interactive Video Tool is an editor used to combine data from both an Audio Visual Interleaved or AVI file and text to produce an output file (an extension of IVD file) which will be used by the Interactive Video Control within Visual Basic. The interactive video Control will then match the appropriate region of the AVI picture to the assigned text.

How To...

(General Step by Step Tutorial)

The following are instruction steps of general and frequently used operations in the Interactive Video Tool. Various ways of performing each of the general operation will be discussed. For a detail discussion of every features and operations of this editor, please refer to the Reference Section.

[Invoke the Editor](#)

[Open a Movie File](#)

[Use the General Object Name List](#)

[Use the Hot Object Name List](#)

[Add Object Name to Hot Object Name List](#)

[Delete Object Name from the Hot Object Name List](#)

[Create HotSpots on selected Objects](#)

[Move between different Frames of the Movie](#)

[Link HotSpots to different Objects on different Frames of the Movie](#)

[Change a HotSpot Object's Layer](#)

[Play a Movie](#)

[Save](#)

[Exit the Editor](#)

[Link the HotSpot Movie File to an Interactive Video Visual Basic Control](#)

Reference Section...

User Interface, Menu and Dialogs Explained

[The Main Editor Screen](#)

[The Movie Playing Screen](#)

[The Object Editor](#)

To invoke the Editor

To use the Interactive Video Tool simply select "**Run...**" from the File menu in Program Manager and then execute "**IAVIEDIT.EXE**" (***) Note: Remember to enter the correct path as well (***)). Another way is to create a icon in the Program Manager for the application and then double click on the icon .

To Open a Movie File

Select "Open" under the File Menu Bar (the movie file should have an extension of .AVI).

To Create HotSpots on selected objects

Press down on the left mouse button and drag out a rectangle on the area of the bitmap where you want to identify as a HotSpot.

To Use the General Object Name List

The general object name list is shown underneath the combo box. All members of this list are permanent. The general object name list simply provides a selection of all the objects available to the hot object list.



Once the object name is selected and becomes "hot" (e.g. ) , this hot object name can be added to or changed positions in the hot object list. To add an object to the Hot Object List, see topic [To add an Object to the Hot Object Name List](#). To Change Object Name Position, see topic [To Change HotSpot Object Layer](#)

To Use the Hot Object Name List

The hot object name list is shown as the following.



The list with a highlighted object is the hot object name list. A highlighted member of this list can be deleted as instructed by the user. To delete an object, member off the list, see topic [To Delete Object Name from Hot Object List](#) .

To Add Object Name to Hot Object Name List

Select an object name by highlighting one object name from combo box (e.g. ) and then do one of the following to Add the object name to the hot object list. Note that the object must be selected from the combo box first before adding to the hot object list.

Menu: Select "Add/Modify Rect" under Edit menu.

Key Board: Ctrl + A

Toolbar: 

To Delete Object Name from Hot Object Name List

Highlight a hot object name from the hot object name list, and then do one of the following to delete the object name from the hot object name list.

Menu: Select "Delete Rect" under Edit menu.

Key Board: Ctrl + D

Toolbar: 

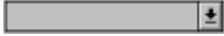
To Move between different Frames of the Movie



Use the horizontal scroll bar to move along different frames of the Movie. The frame counter is located at the bottom left corner of the bar to indicate the current playing frame.

To Link HotSpots to different Objects of a Movie

Steps in linking HotSpots to different objects of a Movie:

1. Select an object name under the combo box .
2. Create a HotSpot on a selected object. (Assuming that the selected object exists under the current frame. If the object does not exist in the current frame, go to the frame where the selected object starts.)
3. Use the scroll bar to move to the next frame. (This step can be eliminated if "Auto Advance" is selected under the Options Menu.)
4. Repeat Steps 2 and 3 until the last frame existence of the object in the movie.
5. Repeat Steps 1 to 4 for linking a new object to the movie.

Once the object is linked to an object name, the mouse will change to icon  when it is moved over the hot objects.

To Change a HotSpot Object's Layer

Choices:

1. Bring an Object to the front of the screen
2. Send an Object to the back of the screen
3. Bring an Object one layer closer to the screen
4. Send an Object one layer away from the screen

To Bring an object to the front of the screen

Menu: Select "Bring to front" under the Edit menu.

Toolbar:

Click on the icon . The object that is the closest to the computer screen is located at bottom of the Hot Object List.

To Send an object to the back of the screen

Menu:

Select "Send to back" under the Edit menu to bring the selected object to the farthest layer from the front of the screen.

Toolbar:

Click on the icon . The object that is the farthest from the computer screen is located at top of the Hot Object List.

To Bring an object one layer closer to the screen

Menu:

Select "Bring higher" under the Edit menu to bring the selected object closer to the front of the screen.

Toolbar:

Click on the icon . The object will go one layer down on the on Hot Object List.

To Send an object one layer away from the screen

Menu:

Select "Bring lower" under the Edit menu to bring the selected object farther from the front of the screen.

Toolbar:

Click on the icon . The object will go one layer up on the on Hot Object List.

To Play a movie

Select "Play" under the "Play Menu". User may also select "start" or "end" under the same menu to start or end a movie respectively.

To Save an Edited HotSpot Movie file

Choose 'Save' or 'Save As...' from the File Menu. For the *Save As* option, you will be prompted with the *Save As... dialog*, where you will have the opportunity to specify a filename of your choice as the name of the to-be-saved HotSpot Movie file.

To Exit the Editor

Choose 'Exit' from the File Menu or left double-click on the editor window's system box (located on the top-left corner of the editor's window)

To link the HotSpot Movie File to an Interactive Video Visual Basic Control

1. Add the IAVI.VBX module to your Visual Basic project. (Choose 'Add File...' from the the *File Menu* in Visual Basic). The  icon will appear on the toolbox palette if the Interactive Video custom control is loaded successfully.
2. Double-click on the  icon on the toolbox to create a Interactive Video control on the Form you are working on.
3. Double-click on the *FileName* property from the Property Window and choose the Movie Data File that you have just created and saved using the Interactive Video Editor. If the Movie Data file (extension .IVD) is loaded successfully, the Filename property should contain the path of Movie Data file created using the editor.

Movie Editor Screen

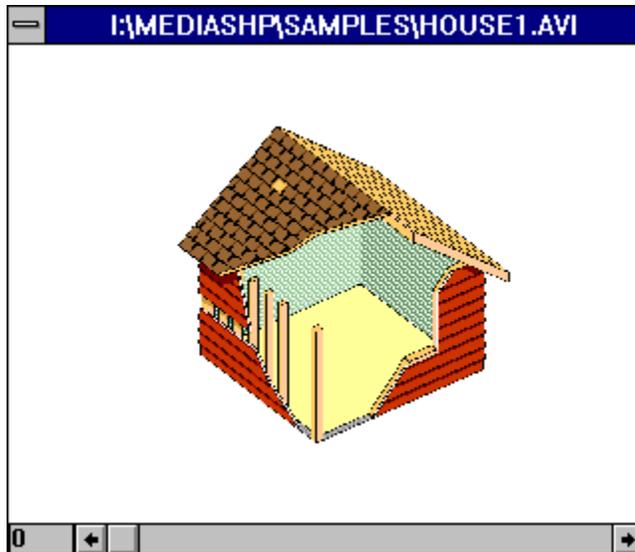
The following is a sample figure of the Interactive Movie Editor: This Editor allows user to open, save and display an AVI file within the Editor window.



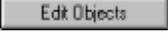
Movie Playing Screen

After the selection of the required .AVI file, the movie file will display on the Movie editor. There is also a controller that provides various adjustment to the display file. The controller is the heart of this Interactive Editor.

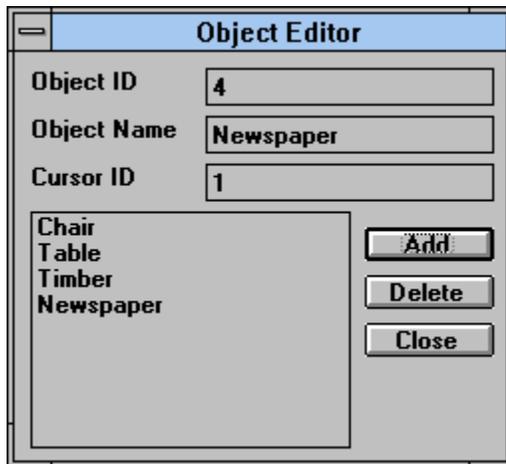
To start playing, just activate "Play" on the menu bar of the Movie Editor. The following is an example of an .AVI movie screen.



Object Editor

Press this screen button  to activate the Object Editor.

The user may add or delete objects interactively onto the AVI picture through the use of an Object Editor like the following diagram: (The three entries are Object ID, Object Name and Cursor ID. The ObjectID must be unique to each ObjectName, and the Cursor ID would identify different cursor icons associated with the specified AVI region.)



Object Editor	
Object ID	4
Object Name	Newspaper
Cursor ID	1
Chair	Add Delete Close
Table	
Timber	
Newspaper	

Note that the user must associate the selected region of the AVI picture with the text for every frame of the movie in order to allow interactivity throughout. To select an Hotspot, the user can simply drag the mouse and release on the same region. An automatic frame number advance mode can be set through the 'Option Menu'.

After editing the objects and saving the work, an interactive data file (an .IVD extension file) will be generated. ***This .IVD file together with its associated .AVI file will be needed for the use of the Interactive Video Control.***

Edit Object Activator Button

Activate this button will bring up the "Object Editor".

General Object Name List Combo Box

Click on the down arrow to see the general object name list.

Hot Object Name Area

Display of Hot object names.

File Menu

Open

Save

Save As

Close

Import Object

Exit

Edit Menu

Add/Modify Rect
Delete Rect

Bring to Front
Send to Back
Bring Higher
Send Lower

Play Menu

Start

Play

End

Options Menu

Auto Advanced
Loop Movie

Close

The **Close** menu item will save and clear any existing movie file in the session.

Import Object

Start

Go to the first frame of the movie.

End

Go to the last frame of the movie

Auto Advanced

When this command is active, advancing between frames in a movie will become automatic as HotSpots on an object is created.

Loop Movie

Activating this command will automatically loop the movie to the beginning when the last frame is reached.

