Digital Captioning

High Tech Center Training Unit

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MAGpie (ver 2.01)

Publisher:

CPB/WGBH National Center for Accessible Media (NCAM)
125 Western Avenue
Boston, MA 02134
Phone: 617.300.3400
http://ncam.wgbh.org/index.html

Retail Cost: Free Download from WGBH/NCAM website (see above)

System Requirements:

1. A PC-based computer running Windows 95/98/2000/XP or Apple Macintosh G3/G4 computer running OSX 10.2 or greater. You must have QuickTime version 5/6 or higher installed in order to caption video content in MAGpie 2.01. A free version of the QuickTime player is available at: http://www.apple.com/quicktime/download/

2. JAVA (version 1.3.x or 1.4.x) must be installed in order to install and run the MAGpie 2.01 application. Installation of the JAVA run-time environment is not necessary with the OSX 10.2 operating system from Apple.

3. The Oratrix GRiNS media player. This will provide the capability to caption RealMedia media clips.

4. RealOne from Real Networks. You can download a free version of the RealPlayer from http://www.real.com . If you would like to have the capability to caption any media file format, it is recommended to upgrade to the paid version of the RealOne Player.

5. WinZip, or another unzip utility. This is required to open the MAGpie software download or access the multimedia clips provided by WGBH/NCAM. You can down download a shareware version of WinZip from: http://www.winzip.com

Description:

MAGpie is a JAVA-based editor for the creation of captions and subtitles for digital multimedia. Using MAGpie, you can author captions and subtitles for playback with three playback engines: Windows Media Object using SAMI (Synchronized Accessible Multimedia Interchange) format, Apple's QuickTime Player using QTtext or SMIL (Synchronized Multimedia Integration Language format), and RealNetwork's RealOne Player using SMIL. MAGpie also has the capability to synchronize audio descriptions to follow with the media presentation.

Creating a Project:
The following instructions will assist you in creating a captioned multimedia clip that can be then exported based on your system requirements.

1. Select **File** and **New Project**.

2. Identify the location of the media clip in the **Base Media** location. In the **Author Info** location, identify the author of the project (optional).
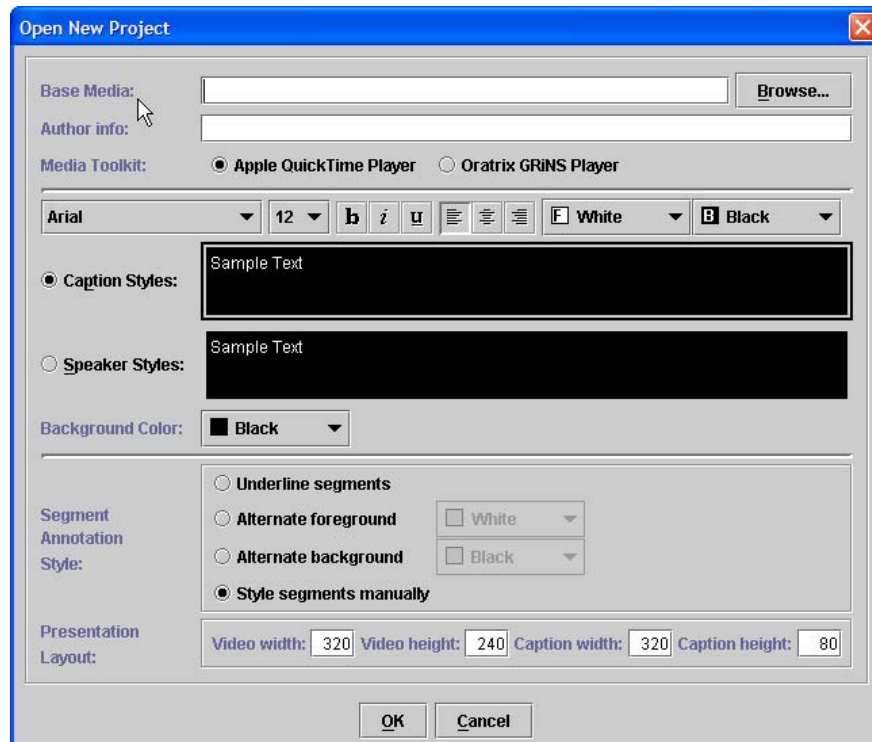
3. For the Media Toolkit, select the Apple QuickTime Player or the Oratrix GRiNS Player depending on the file format of the video presentation. MAGpie 2.01 now supports the direct captioning of QuickTime and Real Media formatted media clips. **Important:** In order to caption Windows Media files, you will need to use the Oratrix GRiNS Player AND have purchased the full version of the Real One Player.

4. Select the formatting choices appropriate for your needs. **Caption Styles** will affect the presentation of content in the caption region, whereas **Speaker Styles** will affect the presentation of information in the speaker region. The speaker region will appear one line above the caption region. (It is also permissible to identify the speaker in the caption region if there is a desire to save space during the presentation of the captioned dialogue).

5. Identify the **Video Width** and **Video Height** from a video editing program (or using a measurement tool such as Screen Calipers at http://www.iconico.com/caliper/). Set

the **Caption Width** at the same value as the **Video Width**. It is recommended to set the **Caption Height** at approximately 80 pixels.

Entering Text:
MAGpie allows the user to create captions from the media clip audio track within the MAGpie interface. The media clip is controlled from the **Player** command in the menu bar or with the following keyboard commands:

Action	Keyboard Command
Pause	F6
Play	F6
Stop	F7
Insert Start Time from Player	F9
Insert End Time from Player	F10

MAGpie contains a *Start Time*, *End Time, Speaker*, and *Caption* column in which to enter information to be displayed in the multimedia viewing area. It is possible to directly enter information into the *Caption* and *Speaker* text areas based on the audio information from the multimedia clip.
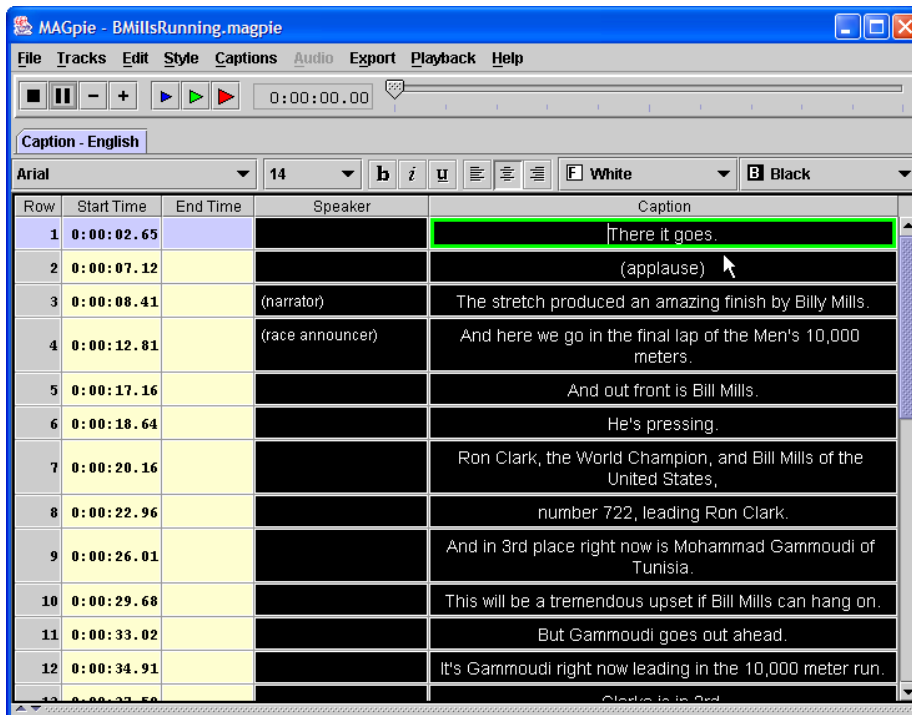
Importing Text:
MAGpie provides a text importer that allows the user to transcribe text using a word-processing document other than the MAGpie interface. Common word-processing programs include MS WordPad, MS Word, Corel WordPerfect, etc. The following steps identify how to import text into the MAGpie interface.

1. Transcribe the audio component of the multimedia clip into a word-processing program.

2. Insert an extra carriage return between separate blocks of text. For example:

    This is an example of a one-line caption.

    This is an example of a two-line caption
    display for the media clip.

    This is another example of a one line caption.

3. Make sure to insert one extra carriage return after the last line of text in your transcribed file.

4. Save your information as a Text file (with or without line breaks).

5. Place the cursor in the first cell of the *Caption* column in the MAGpie interface and then select **Captions** from the menu bar. Select **Insert Captions from file…** and then select the appropriate text file.

Your text should import into the MAGpie layout correctly.

Formatting and Editing Captions:
Once you have imported the transcribed audio portion of the multimedia clip into the MAGpie interface, it may be necessary to format or edit the appearance of the captions in the media player. Under the **Style** command on the menu bar, the text color, font alignment, font appearance can be manipulated. It is generally recommended to maintain consistency of the appearance of the captions for the duration of the multimedia clip. If more than one multimedia clip is to be captioned, it is also recommended to maintain consistency across different projects so as to not visually disturb or surprise the viewer. More information on captioning guidelines can be found under the *Captioning Guidelines* heading.

To alter text content:
1. Highlight the text you wish to alter using the mouse or keyboard commands.

2. Click **Style** from the menu bar and select the desired attributes (e.g., change the font color).

3. The changes will only appear in the caption cell that you choose.

4. If you wish to globally change the appearance of the text, you will need to go to the **File** menu and select **Properties**. Changes in this dialog box will affect the appearance of all the text.

To edit the caption layout:
1. Select the text that you would like to change.

2. Click **Edit** from the menu bar and select the desired function. From this menu, you can insert, delete, or copy "events" to different times within the caption sequence.

Alternatively, you may use the formatting tool bar that is positioned directly above the "Caption" and "Speaker" columns. Changes at this level will only affect specific cells in the presentation and not the overall text content.
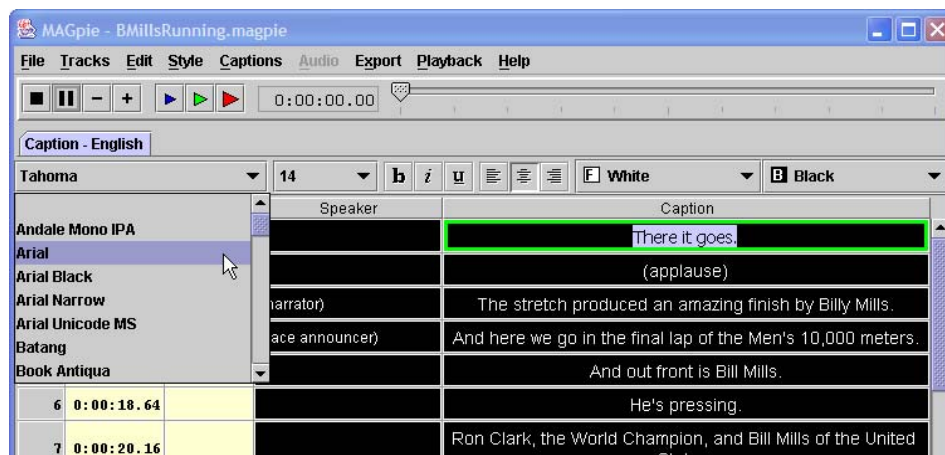
Synchronizing Video and Captioned Dialogue

Transcribing the captioned dialogue of the multimedia clip is generally the longest and most tedious part of the captioning process. Once the text has been entered into the *Caption* column and broken into manageable "chunks", it is necessary to synchronize the transcribed dialogue with the on-screen dialogue. While it is possible to manually enter the video time code under the *Timecode* column heading, the following procedure provides a faster and more efficient method.

To synchronize the video to the captioned dialogue:
1. Position the cursor in the first cell under the *Timecode* column heading.

2. Position the multimedia clip you wish to caption at the beginning of the presentation.

3. Press **F6** key to start the multimedia clip.

4. When you hear the initial words of the first caption, press the **F9** key. This will "capture" the timecode of multimedia clip and insert this timecode under the *Start Time* column heading.

5. With the multimedia clip still playing, press the **F9** key when it is time for the next block of captioned text to appear in the multimedia clip.

Important: Once you have completed the synchronization process, make sure to save your project. To save your project, select **Save As** from the **File** menu.

Selecting the Appropriate Output:

Once the process of synchronizing the captioned dialogue and video clip is complete, it is necessary to export the captioned information to the desired format. MAGpie offers the capacity to export into three different formats.

SAMI (for Windows Media Player)
SAMI – Synchronized Accessible Media Interchange – is Microsoft's proprietary format for providing captioning and audio descriptions for multimedia clips. The one drawback to using the SAMI format is the inability to have multiple concurrent streams. For example, it is possible to have a media file captioned or a media file with audio descriptions, but not have a media file with audio descriptions and captioned dialogue.

To output to the SAMI format:
1. Choose **Export** from the menu bar.

2. Select **Windows Media Player – SAMI Format**. MAGpie will create a **.smi** file that contains the captioned information in the same directory as the saved project file.

3. Proceed to the **Accessible Multimedia in Web Pages** section for information regarding how to review the captioned media presentation in the Windows Media Player.

SMIL (for RealPlayer)
SMIL – Synchronized Multimedia Integration Language – is the format adopted by the World Wide Web Consortium (W3C) as a standard for multimedia on the Internet. SMIL allows for the streaming of multiple files, thus providing the developer with the flexibility to integrate audio descriptions and captioning into a multimedia presentation. The SMIL standard is supported by RealPlayer via the RealText format (**.RT** extension) using RealPlayer G2 and higher. If you are not satisfied with the output information, make corrections to the captioned information and output the content again.

To output to the SMIL format:
1. Choose Output from the Menu Bar.

2. Select SMIL via RealText. This will create a **.RT** file and a SMIL file (the SMIL file "points" to the **.RT** file). If there are other elements that are to be included in the final multimedia presentation, these elements will have to be added to the SMIL file following the work in MAGpie.

3. Combine all relevant files into the same file folder.

4. Review the captioned information by opening the **.RT** file with RealPlayer.

QuickTime
QuickTime is the proprietary format for Apple and requires additional steps to include the captioned information in a multimedia presentation. Once the captioned information has been exported, it is necessary to import this information into a QuickTime movie format and add this new "movie" to the original multimedia presentation. If you are using QuickTime version 5 or later, it is possible to provide captions using the SMIL method.

To output to a QuickTime format:
1. Choose **Export** from the menu bar.

2. Select **QuickTime – SMIL 1.0 format**. Two files will be exported to the directory in which the project is saved. A **en_US.qt.txt** file and a **.qt.smil** file will be created.

3. Review the captioned presentation from within the QuickTime player (version 5.x and higher). If any corrections are necessary, make the changes within the MAGpie interface and repeat the previous steps.

4. For information how to deliver the **en_US.qt.txt** file or the **.qt.smil** file on the Internet, please refer to the section **Accessible Multimedia in Web Pages**.

Captioning Styles and Conventions

Introduction

(Adapted from the Captioned Media Program, www.cfv.org)
The process of captioning is not an exact science. Rather, the individual transcribing the audio track of the video clip must make decisions as to how the audio information should be appropriately rendered. Placement of captions on-screen are somewhat dependent upon screen action, the number of speakers, or the manner in which the speaker is communicating. The information below is a combination of elements that are generally applied to television and broadcast captioning and have been adapted to be appropriate for digital captioning.

The information contained within this section was adapted from the *Captioning and Accessibility Information* white paper produced by the Captioned Media Program. For a complete digital or paper copy of these guidelines, visit: http://www.cfv.org/caai.asp

Text

Caption Placement

Caption placement (vertical and horizontal) refers to the location of captions on the screen. Placement must not interfere with existing visuals/graphics such as maps, illustrations, names of countries, job titles, or names of speakers. Should interference occur, captions should be placed at the top of the screen. If placing captions at the top of the screen also interferes with visuals/graphics, place captions elsewhere on the screen.

It is important to recognize the following information as guidelines for captioning Web-based video or multimedia clips. These guidelines are based on the styles and methods generally used in the television industry and may not fulfill all the needs due to differences in Web-based video and broadcast video. It is recommended that those captioning for the Web, use this information as a guide as to properly present transcribed audio content.

Captions that contain 2 or more lines should be left-aligned.
> *Example:*
> This is an example of captioning
> aligned to the left.

In general, place captions on two lines instead of one long line of text.
> *Example:*
> The quick brown fox
> jumped over the lazy dog.
>
> *Inappropriate:*
> The quick brown fox jumped over the lazy dog.
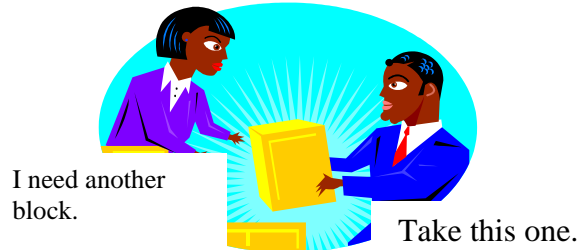
If the captioned text is the same for both lines, indent the second line.
   Example:
      It was a dark and stormy night.
            It was a dark and stormy night.

When there are speakers, place the captioned dialogue under the speaker.
Example:

I need another
block.

Take this one.

If the on-screen individual is dreaming or thinking, identify the description in brackets and use italicized captions above the speaker's head.
   Example:
      [dreaming]
      I wish I had a new Porsche.

Presentation Rate

The presentation rate is the number of words per minute that are displayed on-screen. Generally speaking, this should be approximately 120 words per minute for middle-level educational groups. For upper-level educational videos, it is permissible to be above the 120 words per minute rate.

For children, caption information should be presented at the 150-160 words per minute rate. Adult level videos can be presented at near verbatim rate, but not exceed 225 words per minute. Additionally, no caption should remain on-screen less than 2 seconds.

Presentation rate is ignored when a famous speaker is quoted or the captioned dialogue is a poem, song lyrics, or another published literary work. For these situations, it is important the captioned information is presented verbatim.

If editing is necessary to maintain a proper rate of presentation, the edited dialogue should retain as much of the original meaning and content as the unedited dialogue. Editing should only be performed if the captioning dialogue rate exceeds the rate of presentation. Efforts to "speed up" the presentation of captioned dialogue are inappropriate and should not be adopted.

Language Mechanics

The English language contains many rules (and exceptions) that specify the format of grammar and punctuation and the spelling of words. When beginning a captioning project, it is recommended to have available several dictionaries for reference. The Captioned Media Program uses Random House Webster's Unabridged Dictionary and the American Heritage Dictionary. It may also be useful to have a reference book for different language styles (e.g., American Psychological Association Manual of Style, Chicago Manual of Style, etc.).

Consistency

When spelling or formatting the captioned dialogue, maintain consistency throughout the video. For instance, if a word is hyphenated in the beginning segment of the video, maintain the hyphenation throughout the video clip.

Capitalization

The name of a speaker should be capitalized in the video. However, do not capitalize the identification of a speaker.
> *Example:*
>> His name is Frank.
>> He is a computer specialist.

Grammar

A contraction should be represented on-screen in the manner in which the contraction was spoken. Avoid using contractions unless it is explicitly spoken in the dialogue.
> *Example:*
>> Make sure you submit the forms,
>> files, documents, et cetera.

Punctuation

Using punctuation correctly provides the viewer with a clear understanding of the dialogue and the contextual meaning of the spoken information. The captioned dialogue can contain "errors" that would not be allowed in written text. For instance, run-on sentences or incomplete sentences may be perfectly valid for captioned dialogue, but would be considered unacceptable in written text.

Standard punctuation marks can be used to convey emotion or tone. Using multiple punctuation marks can communicate strong emotion for necessary dialogue.
> *Example:*
>> Run away!!!!
>> Stop that man!!!!

To communicate that the on-screen speaker is screaming, use all capital letters.
> *Example:*
>> JUMP!!

Special emphasis can be given to nonessential information using double dashes, or a single long dash, rather than using commas to separate information.
Example:
    The small boat sailed all the way from
    London, England – 2,500 nautical miles.

If the on-screen speaker stutters, caption the dialogue verbatim using dashes between each letter.
Example:
    Th-th-th-the quick br-br-brown fox

Special Considerations

Special considerations identify those elements that are not necessarily covered by normal use of the English language or are specific to a particular video presentation.

Sound Effects

For sound effects or onomatopoeia, use the lowercase format. If the sound effect or onomatopoeia includes a proper name, then it is permissible to use capitalization for that proper name.
Example:
    [horn honking]
    beep-beep

If the source of the sound is clearly understood, then it is not necessary to have the source of the sound identified. However, if the source of the sound is not apparent or is off-screen, then it is necessary to place the source of the sound within brackets. Off-screen sounds should be italicized.

Incorporating sounds effects into the captioned information can provide a better understanding of the video information presented. It is important, however, to distinguish between sound effects that provide meaning about the video and sound effects that may compete with the spoken dialogue. The presentation rate of the captioned dialogue and the use of sound effects must be balanced in such a way that the use of both enhances the viewing and comprehension of the video.

Numbers

Communicating numbers in a text format often introduces inconsistencies in the manner in which the information is displayed. In general, numbers between one and ten should be spelled out, whereas numbers greater than ten should expressed in numerical format. Numbers that contain greater than five digits should also include a comma to easily communicate amount.
Example:
    He had three bananas.
    She gave $10,000 to the school.

If the number begins a sentence, then it is permissible to spell out the numerical value of the amount.

Dates

Correct display of dates is necessary depending on the context in which the date information is spoken. When the date and month is mentioned (i.e., no year), then using "th", "st", or "nd" is necessary.

>   *Example:*
>
>   His birthday is on July 3rd.

When the day, the month, and the year are spoken, use only the numeral for the day (even if the "th", "st", or "nd" is spoken).

>   *Example:*
>
>   The conference began
>   on July 12, 1988.

Decades, or periods of time, should not include the "'s" format. Rather, the "s" should be appended to the end of the year.

>   *Example:*
>
>   Where were you
>   in the 1970s.

Monetary amounts

Use the cents (¢) symbol for US monetary amounts less than one dollar. Use the dollar ($) symbol for monetary amounts exceeding one dollar.

>   *Example:*
>
>   I owe you 47¢.
>   Give me $13.

Measurements

When captioning measurements, do not use symbols or abbreviations for units of measure. Instead, spell out the full word (e.g., "yards", "inches", "cups", etc.) of the measurement. However, it is permissible to use common abbreviations for measurements if spoken in a shortened form.

>   *Example:*
>
>   The window opening is 5'4".
>   I need 5 cups of molasses.

Basic Captioning Terms

Off-line captioning:
Captioning that is produced after a video segment has been recorded. A captioner watches the video recording and creates captions, paying attention to the timing and screen placement of each caption. The captions are usually then recorded on a videotape with the program picture and sound before the program is broadcast or distributed. Most captioned programming is produced off-line.

Real-time captioning:
Captions that are simultaneously created and transmitted during a video program or conference. This type of captioning is most frequently used for live programs, including news shows and sporting events. A trained stenotypist, acting in much the same way as a courtroom reporter, enters the spoken content by typing phonetic codes on a special keyboard that permits high-speed transcription. A computer, using custom software, then very quickly translates the phonetic codes into proper words. In order to display the words as quickly as possible after they are spoken, most realtime captioning is shown in a scrolling style.

Closed captions:
Captions that appear only when special equipment called a decoder is used. Closed captioning is typically used for broadcast television and for videocassettes of movies that are widely distributed. Closed captioning allows caption users (people who are deaf or hard of hearing) to enjoy the same broadcast and pre-recorded video materials that other television viewers enjoy.

Open captions:
Captions visible without using a decoder. When a video is open captioned, the captions are permanently part of the picture. Open captions are advised for any situation where a decoder may be difficult to obtain or operate (for example, in a hotel, convention center, or museum). For this reason, open captioning is recommended for training and promotional videos.

Closed caption decoder:
Equipment that decodes the captioning signal and causes captions to appear on the screen. In the 1980s and early 1990s, closed caption decoders were usually separate appliances that connected to the television set, VCR, and/or cable converter box. Since July 1, 1993, all television receivers with screens 13 inches or larger manufactured for sale in the United States must have built-in closed caption decoders, and the additional appliance will not be needed for these sets.

Roll-up and Pop-On captions:
These are the two main styles in which captions may appear. Roll-up captions scroll onto and off the screen in a continuous motion. Pop-on captions do not scroll; the words display and erase entirely together. Pop-on captions are used for most off-line captioning. Roll-up captions are used for most real-time captioning.

Accessible Multimedia in Web Pages

To place multimedia content in web pages, a web page designer can embed the multimedia clip into the page itself or allow the multimedia clip to open a player on the user's computer. For accessibility purposes, it is generally recommended to allow the specified media player (i.e., QuickTime, Windows Media Player, or Real Player) to open on the user's computer. A media player that opens on the user's computer provides full access (including keyboard commands) to the positioning elements that control the rate of play of the multimedia clip. This provides the user with greater flexibility when operating the media player and controlling the rate of presentation.

The advantage to embedding a media player within a web page ensures the multimedia clip will play even if the user does not have the necessary plug-in installed on their computer. However, it is more difficult for users to use standard keyboard commands to play the multimedia content when the media player is embedded in a web page. Developing accessible embedded multimedia players requires knowledge of java scripts and is covered in the Advanced Web Access training.

For Real Player and Windows Media Player, designing a web page that begins these players requires additional elements to the HTML code. The first section will describe how to develop a Windows Media Player hyperlink to ensure proper multimedia clip viewing while visiting a web page.

Windows Media Player

The Uniform Resource Locator (URL) link used in SAMI specifies a path to the location of the SAMI file and Windows Media file. The special URL link associates a Windows Media file to the appropriate SAMI file. The following is an example of the proper syntax for a SAMI URL:

*full location path of the media file**?sami**=full location path of the SAMI file*

The SAMI URL syntax is commonly used in a hyperlink or a Windows Media metafile. However, newer versions of the Windows Media Player may not always display the captions correctly if simply linking to the multimedia presentation. Therefore, it is recommended that you create an .ASX file, which contains the filename path to both the video presentation and the captioned presentation (i.e., SAMI file). This will allow the captions to be viewed in all versions of the Windows Media Player. **The following is the recommended method to deliver captions using the Windows Media Player.**

Step 1 - Create the .ASX file
The first step is to create a .ASX file. If you are using Windows streaming media, it is better to create a .ASX file to deliver your Windows streaming media for security reasons. The .ASX file can be created in a text editor (such as Notepad) and saved with the .ASX extension. Below is an example of a .ASX file.

```
<asx version="3.0">
<abstract>Place information describing the show here</abstract>
<title>Title of the show goes here</title>
<author>Author Name</author>
<copyright>Place (c) copyright info here</copyright>
<entry>
<ref href="http://servername/filename.wmv?SAMI=http://servername/filename.smi" />
<abstract>Place information describing the clip here</abstract>
<title>Title of the clip goes here</title>
<author>Your Name or the Author of the Clip</author>
<copyright>Place (c) copyright info here</copyright>
</entry>
</asx>
```

Step 2 - Modifying the .ASX file

Once you have created a .ASX file (you can copy and paste the above information into a text editor), you will need to slightly modify the .ASX file. In the .ASX file, it is necessary to identify the <ref href="..."> tag. This is where you place the full URL of the location of the Windows media file and the full URL of the location of the SAMI file. Notice that there is the text **?SAMI=** between the two URL's. This is necessary to properly deliver the SAMI file to the Windows Media Player and ensure the captions playback correctly.

Step 3 - Delivering the Content via the Web

After you have made the appropriate URL path corrections to the .ASX file, you will need to create a hyperlink from your web page to the .ASX file. Perform the following steps:

1. Save your .ASX file to your webserver.

2. Create your webpage.

3. Create a hyperlink that links to the .ASX file on the webserver. When a visitor clicks the web page hyperlink, this will activate the .ASX file, which in turn will begin both the video clip file and the captioned file (see diagram below).

4. The result will be a captioned video presentation that appears on the visitor's computer. Check your presentation to make sure it appears correctly in the Windows Media Player.
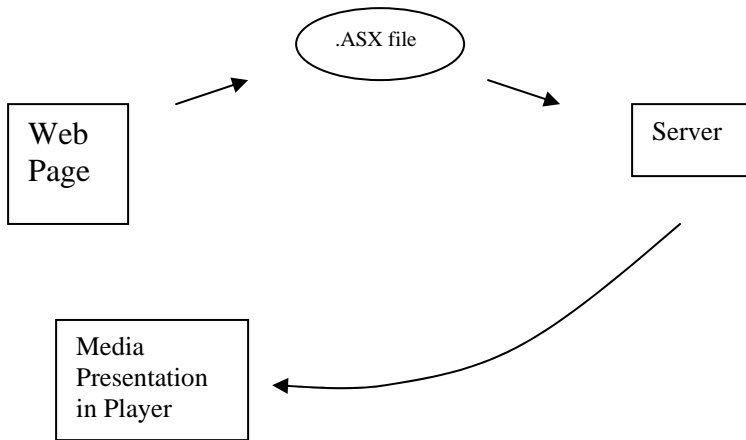
Diagram of .ASX file path from web page to server to media presentation.

If the captions do not appear in the media player (and you have checked that the path to the media files is correct) you may need to turn on the captions in the Windows Media Player. Please see the section titled **Playing the Media Clip with Captions** for more information about how to make the captions appear in your media player.

RealNetworks Real Player

Similar to the process undertaken with Windows Media Player media, it is necessary to complete additional tasks in order to open a client-side version of the RealPlayer media interface. If you are using a RealNetworks streaming server, it will be necessary to coordinate with your network/computer technology administrator in order to place media files in the proper server location. Specifically, you will need to know if Ramgen is enabled, and the correct procedure for uploading streaming media content to the streaming server. When Ramgen is enabled, it acts to launch the RealPlayer on the client's computer and provide direction to the .SMIL file located on the streaming server. The .SMIL file will then point to the relevant files necessary for the streaming media presentation. Your hyperlink code should look similar to the following when using a RealNetworks streaming server with Ramgen enabled:

...

If you are not using a RealNetworks streaming server with Ramgen enabled, it will be necessary to create a .ram file manually. Similar to using the Ramgen function, a .ram file resides on the server and will contain the correct path to the .smil file. This in turn tells the RealPlayer what content to present to the user.

Step 1 - Creating a .RAM file manually
If using a RealNetworks streaming server with Ramgen disabled, enter the full network path to the appropriate SMIL file using a text editor (e.g., Notepad).

Example:
rtsp://realserver.company.com/media/sample1.smil

If using a Web server for playback for the streaming media clip, specify the Web server name and the location of the SMIL file on the server using a text editor (e.g., Notepad).

Example:
http://www.company.com/media/sample1.smil

For local playback (file located on the computer), specify the location of the clips relative to the location of the .RAM file on the computer using a text editor (e.g., Notepad).

Example:
file://media/sample1.smil

Create the appropriate .RAM file depending on the hardware configuration intended for the presentation. When you have entered the necessary information, save the file with a .ram extension.

Step 2 - Delivering Content via the Web
Once you have created a .ram file that specifies the location of your SMIL file, you are ready to present your project on the web. Move the .ram file to the RealNetworks or Web server as well as the content you intend to stream. The multimedia clip(s) and SMIL file do not need to reside on the same server as the .ram file. The .ram file will point to the specified multimedia clips and present this content to the user's player.

1. Create your webpage.

2. Create a hyperlink to the .ram file. This should be similar to the following:
    Video Link .

3. When a visitor clicks the web page hyperlink, this will activate the .ram file, which in turn will begin both the video clip and the .rt file (i.e. captioned dialogue file). The result will be a captioned video presentation that appears on the web page visitor's computer.

4. Check your presentation to make sure it appears correctly in RealPlayer.

If the captions do not appear in the media player (and you have checked that the path to the media files is correct) you may need to turn on the captions in the RealOne Player. Please see the section titled **Playing the Media Clip with Captions** for more information about how to make the captions appear in your media player.

Captioning QuickTime Multimedia

Introduction

Providing captions for QuickTime multimedia presentations now provides flexibility to deliver captions using the SMIL format or to deliver captions embedded into the original (i.e., uncaptioned) multimedia presentation. This provides an experience in which, during playback, the captions will appear to any individual viewing the QuickTime file. The first section will discuss how to create captions and embed the information into the QuickTime presentation. The section titled "Delivering QuickTime Media using SMIL" will discuss how to deliver QuickTime presentations with captioning using the SMIL method.

System Requirements

1. MAGpie captioning application (available at NCAM/WGBH website). Apple OS version only works with MAGpie 2.0 or later.

2. QuickTime Pro (version 6.01) - may be purchased from Apple, Inc. for $29.99 per copy. **Make sure to install Picture Viewer**. Site licenses for educational use may be obtained at discounted rates. Additional information for QuickTime Pro at: http://www.apple.com/quicktime

Procedure

To develop a synchronized text transcript of the multimedia presentation, it is necessary to first use MAGpie and export the file in a QuickTime format. Please see the training manual or the Help menu for information on how to create this file. Once this file has been created, it is then possible to follow the following procedures to complete the captioning process.

Converting the Captioned File
After developing the synchronized text transcript, you must convert this file into a QuickTime movie.

1. Begin QuickTime and select "Import" from the File menu.

2. Navigate to the appropriate Qtext file that contains the captioned dialogue exported from MAGpie. Depending on your system, this will generally appear with a .TXT file extension.

3. Select the file and click the Convert button.

4. You will then be prompted to save the file as a movie in a new location. Select the appropriate location on your computer. Click the "Options" button to change the import settings of the text content. The following suggestions have been made by the MAGpie working group at WGBH/NCAM regarding the text import selections:

   - Generally, the convention is to set the width of the caption area to be the same as the width of the video area. If you do not know the dimensions of your video, you should find out by opening the video in QuickTime and choosing 'Get Info' from the 'Movie' menu.

   - The height of the caption area presents a problem. It is not recommended that you select 'Use Best-Fit Height'. Instead, specify a height that is larger than might seem necessary. For a set of captions with a maximum of three 14-point lines, a height of 75 pixels seems to work well. Differences in the way Windows and Macintosh computers display fonts create obstacles to the creation of a cross-platform caption display.

   - Other options in this dialog include anti-alias for smooth font scaling, drop shadow for a 3D font effect, and keyed text for captions that overlap video and need a transparent background to allow the video to show through.

5. Select "Ok" when you have the options selected.

6. Select "Save" to save captioned text file as a QuickTime movie.

Adding the Captions
1. Open the captioned movie and choose "Select All" from the Edit menu. Choose "Copy".

2. Open the original, uncaptioned multimedia presentation in a new QuickTime window.

3. Before pasting the copied text, make sure the QuickTime player sliders are located at the beginning of the multimedia presentation. The sliders are located above the QuickTime player controls.

4. Select Edit and then select "Add". The captioned region will first appear in the upper part of the QuickTime player. Positioning of the captioned region will be addressed in the next section. If using earlier versions than version 6.x of QuickTime, it may be necessary to hold down Ctrl + Alt (PC) or the Option key (Mac) when selecting Edit from the menu bar.

Positioning the Captions

1. Once the captions have been placed into the original multimedia presentation, it may necessary to position the captions in better location.

2. Select Movie from the menu bar, and choose "Get Movie Properties".

3. In the left drop-down menu, select "Text Track". In the right drop-down menu, select "Size".
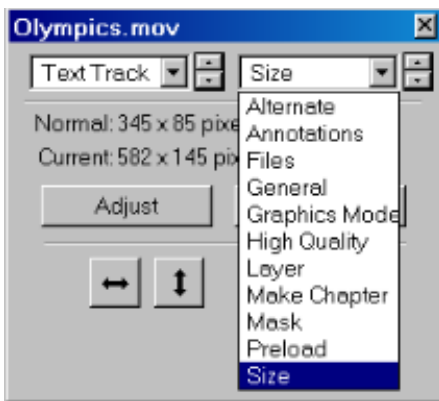
4. Select the "Adjust" button. This will cause the captioned text area to be highlighted. Position the mouse in the black region of the text region and drag the text region to the bottom portion of the QuickTime player. Several attempts may be required to position the text region properly.

5. Once the text region is in the correct location, select the "Done" button. Close out the Movie Properties dialog box.

6. Save the QuickTime movie. It is recommended to save the movie as a different file name to distinguish this version from the uncaptioned version.

Delivering QuickTime Media using SMIL

Introduction

QuickTime versions 4.1 and later have the capability of recognizing the SMIL format for video presentations. When using the SMIL format to display captions, your computer system may attempt to begin the presentation with a media player other than QuickTime. When viewing a presentation on your local system, it may be necessary to open QuickTime first and then open the SMIL file from within the QuickTime Player. For a complete description of the QuickTime elements that can be controlled using the SMIL format, visit: http://developer.apple.com/techpubs/quicktime/qtdevdocs/

Step 1 - Create QuickTime SMIL file
1. Create a captioned presentation using MAGpie 2.01 .
2. Export the captioned file as "QuickTime - 1.0 SMIL format".
3. Two files will be exported. One file will end with ".qt.smil" and the second file will end with ".qt.txt".
4. Check the ".qt.smil" file to make sure the video source and textstream source reference the correct files. The video source should be the **.mov** file (i.e., the video file) and the textstream should be the **.en_US.qt.txt** file.

Example SMIL file:

```
<?xml version="1.0" encoding="UTF-8"?>
<smil
xmlns:qt="http://www.apple.com/quicktime/resources/smilextensions"
xmlns="http://www.w3.org/TR/REC-smil" qt:time-slider="true">
<head>
<meta name="title" content=""/>
<meta name="author" content="Sean Keegan"/>
<meta name="copyright" content=""/>
<layout>
<root-layout height="335" width="330" background-color="black"/>
<region height="240" width="320" background-color="black" left="5"
top="5" id="videoregion"/>
<region height="80" width="320" background-color="black" left="5"
top="245" id="textregion"/>
</layout>
</head>
<body>
<par dur="0:01:25.87">
<video dur="0:01:25.87" region="videoregion"
src="http://servername/filename.mov"/>
<textstream dur="0:01:25.87" region="textregion"
src="http://servername/filename.en_US.qt.txt"/>
</par>
</body>
</smil>
```

Step 2 - Delivering Content via the Web
Once you have a SMIL file that references your QuickTime movie and the QuickTime text track, it will need to be posted on your web page. The code below provides the framework for opening the QuickTime player on the user's computer in order to view the complete multimedia presentation.

Example HTML Code:

```
<object classid="clsid:02BF25D5-8C17-4B23-BC80-D3488ABDDC6B"
width="320" height="240" standby="Data is loading..."
codebase="http://www.apple.com/qtactivex/qtplugin.cab">
<param name="src" value="image.pct">
<param name="autohref" value="true">
<param name="controller" value="false">
<param name="href" value="http://servername/filename.smil">
<param name="target" value="quicktimeplayer">
<embed src="image.pct" type="image/x-quicktime" width="320"
height="240" autohref="true" controller="false"
href="http://servername/filename.smil" target="quicktimeplayer">
</embed>
</object>
```

To maintain browser functionality, it is necessary to have both the <object> and the <embed> tags present in the HTML code. It is necessary to change the value "http://servername/filename.smil" to the correct location of the SMIL file on your webserver.

Some additional points:
1. Provide a static image for the QuickTime movie clip where the value is set to "image.pct". This image will be present in the web browser and can be of the first image of the QuickTime presentation or of another element. It is best to use an image that is generally associated with QuickTime (e.g., .pct file). A simple method is to open the movie in QuickTime and then save the opening screen-shot as a **.pct** from within QuickTime. This will provide you with the necessary image file.

2. You can toggle the movie autoplay feature by setting the "autohref" value. Setting this value to "true" will automatically open the QuickTime player on the user's computer. Setting this value to "false" will not open the QuickTime player on the user's computer until the user selects the picture of the movie to begin the presentation.

3. After you have completed this process, check the presentation in a web browser. If the movie does not play, check to make sure the filenames are correct in the HTML code and the SMIL file.

Playing the Media Clip with Captions

Each media player (i.e., Windows Media Player, RealPlayer, and QuickTime) controls the presentation of captioned dialogue using different methods. Digital media can be closed captioned, meaning the end-user has the capacity to view the captioned dialogue if they so desire.

Windows Media Player

To display captions from within Windows Media Player (version 7 and above), follow these steps.

1. Select **View** from the menu bar.

2. Under the **Now Playing Tools** option, select **Captions**.

3. Captions should now be visible on the lower part of the media player.

RealPlayer

To turn on Captions in the RealOne Player:

1. Select "**Tools**" from the menu bar.

2. Select "**Preferences**".

3. On the left menu region (under "**Category**"), choose "**Content**".

4. In the right display area, under "**Accessibility**", select the checkbox that says, "Use supplemental text captioning when available".

5. Choose "**OK**" to return to the main interface.
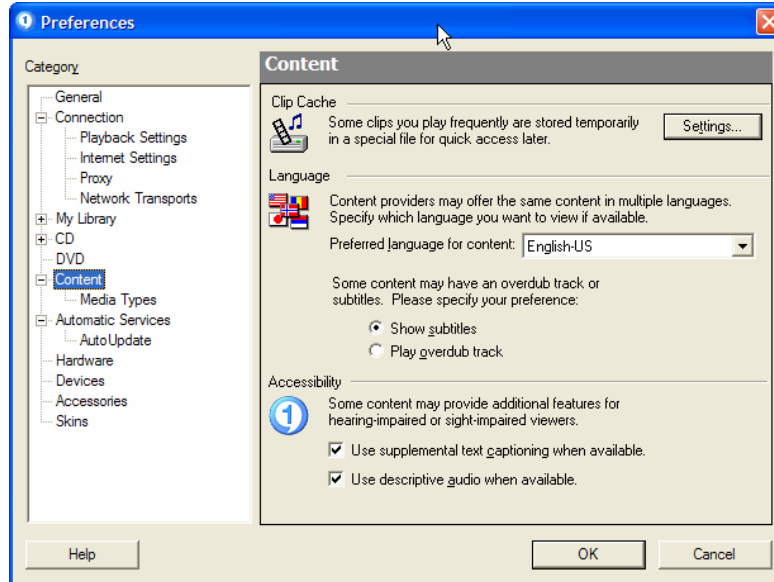
The captions should appear below the movie clip. If not, you may need to close and re-open the RealOne Player. If captions still do not appear, check the filenames and the directory path where the files have been placed.

To turn on Captions in other RealPlayers (not RealOne Player):
1. Select **View** from the menu bar, and choose **Preferences**.

2. Select the **Content** tab. At the bottom of the menu is a choice for **Accessibility**. Select the button labeled **Settings**.

3. Check the box labeled **Use accessibility features when available**. You may select which accessibility features you prefer (i.e., captions or audio descriptions).
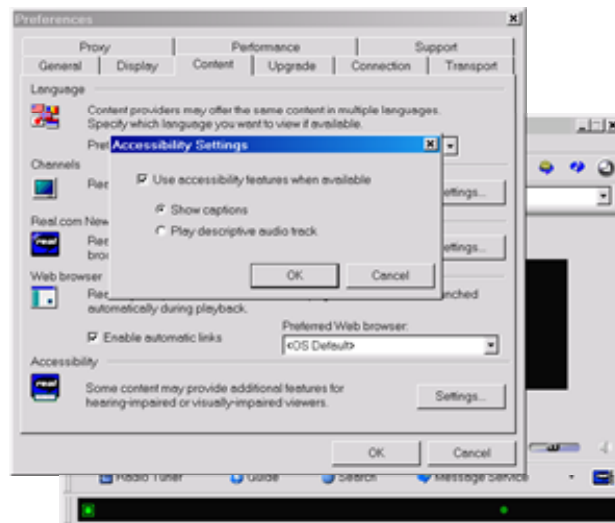
Digital Captioning Web Resources

Real Networks (*for RealPlayer)*
>For technical assistance using SMIL and creating and streaming RealMedia content.
>http://service.real.com/index.html?src=020320realhome_2

Windows Media Player
>For technical information on using SAMI to create captioned multimedia content.
>http://www.msdn.microsoft.com/library/default.asp?url=/library/en-us/dnwmt/html/wmp7_sami.asp

QuickTime
>For technical information for creating captioned QuickTime movies.
>http://www.quicktime.com
>
>http://www.dv.com/magazine/2001/0501/murie0501.html
>
>http://ncam.wgbh.org/news/webnews16.html

Styles and Markup for Captioned Dialogue
>http://main.wgbh.org/wgbh/pages/captioncenter/ccstyles.html
>
>http://www.cfv.org

MAGpie Software
>http://ncam.wgbh.org/webaccess/magpie/