QuickTime 1.5: Technical Overview

Article Created: October 26, 1992
Article Reviewed/Updated: 19 August 1996

TOPIC ---

QuickTime 1.5 includes support for Photo CD images. This allows applications to open PhotoYCC (Kodak's color digital image format) files as if they were Macintosh picture files. Special translators and plug-ins are not needed.

With QuickTime 1.5 and the new CD-ROM Setup 4.0 software, any AppleCD drive can read Photo CD discs:

- The new AppleCD 300 and AppleCD 300i support both single and multisession Photo CDs.
- All earlier AppleCD drives (AppleCD SC, AppleCD SC Plus, and AppleCD 150) support single session Photo CDs only.

This article describes the new features of QuickTime 1.5 that make this possible.

DISCUSSION ---

MOVIETOOLBOX

High Level Editing

QuickTime 1.5 provides support for pasting different data types into a movie. For example, QuickDraw pictures and standard sound data can be pasted directly into a movie. If the application uses the Movie Controller, this support happens transparently and nothing needs to be changed in those applications. New support calls provide for pasting in any data type for applications that make calls to the Movie Toolbox directly to do editing.

Data Fork Movies For QuickTime 1.5

New routines are provided for storing and retrieving movies stored in the data fork of a file. These routines provide more robust data reference resolution and better low-memory performance than was possible using

NewMovieFromHandle and PutMovieIntoHandle in QuickTime 1.0.

IMAGE COMPRESSION MANAGER

CompactVideo Compressor

The new CompactVideo Compressor is best suited to compressing 16-bit and 24-bit video sequences. It's a lossy algorithm that's highly asymmetrical. In other words, it takes significantly longer to compress a frame than it does to decompress that frame. Compressing a 24-bit 640x480 image on a Macintosh IIfx takes approximately 4 minutes, achieving a compression ratio of 13.5:1. Decompressing the image takes less than a second.

Compared to QuickTime's original video compressor, CompactVideo obtains higher compression ratios, better image quality, and faster playback. When used in conjunction with MovieShop, CompactVideo can constrain data rates to user-definable levels. This is particularly important when compressing material for playback from CD.

For best results, CompactVideo should be used on raw source data that has never been compressed with a highly lossy compressor before (including CompactVideo).

Alignment Calls

New window alignment calls provide a mechanism for positioning and dragging windows to optimal screen positions based on the depth of the screen. Rectangles on 1-bit and 2-bit screens are horizontally aligned to multiples of 16 pixels, 4-bit to multiples of 8, 8-bit to multiples of 4, and 16-bit to multiples of 2. Alignment on 32-bit screens only occurs on 68040-class systems or greater, and then it's to multiples of 4 pixels. When the alignment rectangle crosses more than one screen, the alignment of the strictest screen is used. Decompression to non-optimally aligned destinations can reduce performance by as much as 50%, so these calls should be used whenever possible.

The default alignment behavior will be adequate for the vast majority of cases where alignment is desired. However, when alignment characteristics specific to particular video hardware is needed, or for other reasons, default alignment can be overridden.

Changes to Standard Compression

Most of the changes to the Standard Compression dialog have been below the surface: bug fixes and better memory management in particular. Please note that movies recorded under QuickTime 1.0 won't play back under 1.5 with the improvements in screen size, faster rate, and so on. To see these improvements, you must record under QuickTime 1.5. Here are descriptions of changes visible to the application developer and the user:

- Movie Controller
  Two new calls in the Movie Controller make it easier to deal with edit menus. And some new action flags were added to make it easier to detect

and intercept clicks.

- Video Digitizers
  Support is added for digitizer cards with capabilities previously unaddressed. For example, features were added to deal with cards that can provide compressed video images directly.

- Movie Import and Export
  MovieImport and MovieExport components provide a standard way for applications to get any type of data into and out of a QuickTime movie.

  - MovieImport components take data from a file or handle and put it into a movie.

  - MovieExport components take a portion of a movie and put it into a file or handle.

  Both MovieImport and MovieExport components may have a dialog that is presented to the user to configure the translation, but the components should work even if the dialog is not displayed.

  A typical use of a MovieImport component would be to allow a user to paste a PICT from a favorite paint application into a movie. Another use would be to convert a PICS file into a QuickTime movie. A MovieExport component might be used to export the sound track of a movie to an AIFF file so that it can be edited in a non-QuickTime-aware sound-editing application.

  MovieImport components can be requested to add data to a movie in one of three ways. The caller may specify that the data go into:

  - A particular existing track.

  - A new track, created by the MovieImport component.

  - One or more existing tracks, creating new tracks if necessary

  MovieExport components can be requested to take data from either a movie, or from a single track.

- Sound Digitizers
  New selectors have been added to support the new sound input configuration dialogs supplied by the Sequence Grabber.

Article Change History:
19 Aug 1996 - Corrected misspelling.
18 Dec 1992 - Revised to include information about movie playback.

Keywords: <None>

Tech Info Library Article Number: 10874