Indeo® Video Interactive
Release Notes, June 28, 1996

Introduction

Intel is pleased to introduce the latest update to Indeo® video interactive. This version introduces a number of new benefits including performance improvements, quality enhancements, and new interactive features. The latest version of the Indeo video interactive codec, along with documentation, sample source code, the latest technical information updates, and access to technical support are available on the Indeo video World Wide Web home page at http://www.intel.com/pc-supp/multimed/indeo/.

Performance Improvements

The performance of the new codec has been enhanced in several ways:

- The codec has been optimized for MMX™ technology. MMX technology is a major enhancement to the Intel Architecture that will make mainstream PCs richer multimedia and communications platforms.   This enhancement includes 57 new instructions that will allow Intel processors to deliver better performance for multimedia and communications computation.   Later in 1996 Intel will be adding MMX technology enhancements to new versions of the Pentium® processor, and when PC's using the new processors are introduced Indeo video interactive will benefit from the performance improvements offered by MMX technology. For more information on MMX technology visit Intel on the World Wide Web at http://www.intel.com/pc-supp/multimed/mmx/.

- The codec uses less memory. The actual amount of memory used by the codec when playing a given file will vary depending on how that file was compressed, but the new codec will use anywhere from 25% to 40% less memory to open and play a file than the previous version.

- Files load and start playing faster. The actual time it takes to open and begin playing a file on a given PC will vary based on system performance features such as CPU speed, RAM, L2 cache, etc., but on average the new codec will open and start playing files 20% to 40% faster than the previous version.

- Playback performance has improved. A number of optimizations have been made to speed up playback of video files, especially in 16-bit (65,000-color) display mode.

Compression Enhancements

Enhancements have been made to the offline encoder, and a new compression mode called the Quick Compressor has been added to make compressing video files much faster and easier.

Online Help

An online help menu is now available in the encoder's Configure dialog. This will help guide the user through the various options available for encoding video clips.

Offline Encoder Improvements

Improvements have been made to the offline encoder that will allow compressed video clips to display better quality at lower data rates. This will be especially noticeable in clips compressed at single-speed CD-ROM data rates (~ 100-135 Kbytes/second) and lower, and in clips compressed at 30 frames/second at double-speed CD-ROM data rates (~ 200-250 Kbytes/second) and below. You must compress clips with the new version of the codec to see these improvements.

The Quick Compressor

Normal offline encoding can be time-consuming. The new Quick Compress option allows Indeo video interactive to encode video many times faster than it otherwise would. Exactly how much faster depends on the specific content of the source video and the other encoder options you've selected. The compression speed improvement, however, is significant: compression jobs that once took hours may now compress in just minutes.

One reason the Quick Compressor is so much faster than the offline compressor is that it uses a subset of the offline encoder's compression techniques. This speeds compression but slightly reduces overall visual quality. The Quick Compressor is also slightly less accurate at maintaining the requested target data rate than the offline encoder.

If you choose Quick Compress several other options are automatically disabled: bidirectional prediction, transparency, quality, and minimum viewport size (local decode). Also, the Quick Compressor can encode video at resolutions up to 640 x 480, whereas the offline encoder supports resolutions up to 8192 x 8192.

The Quick Compressor is extremely useful for tasks such as previewing edits and special effects, and for prototyping multimedia applications. It can also save time when creating video for hard disk applications, where data rate control is less critical. However, after you've previewed the video and made any required adjustments, it's best to use the off-line encoder to compress the video for your final product. For the best quality at lower data rates, or to achieve a steady data rate without spikes, do not use the Quick Compressor.

The Indeo video interactive codec can play back any video clip compressed with the Quick Compressor.

To enable quick compression, check the Quick Compress box in the Encoder Controls area of the encoder's Configure dialog box.

Playback Enhancements

The new version of Indeo video interactive offers enhanced playback quality, and new features designed to enhance the interactivity and video quality of Indeo video in multimedia applications.

Playback Quality Improvements

Changes have been made to the decoder which will improve the playback quality of both new and existing video clips:

- A problem which was causing a pinkish color shift in both 16-bit (65,000-color) and 24-bit (16.7-million color) display modes has been eliminated.

- Zoom-by-two quality has been improved in 16-bit (65,000-color) display mode. A problem which was causing an excessive dither pattern has been eliminated.

Alternate Line Zoom-by-two

Indeo video interactive supports alternate line zoom-by-two, a feature that doubles the video window size by horizontal pixel doubling and then drawing a row of black pixels in between each row of image data. This can help reduce some of the "jaggies" caused by vertical pixel doubling. The latest version of the sample Indeo video player program <u>IVIPlay</u> demonstrates this new capability; the <u>IVIPlay User's Guide</u> is available on the Indeo video home page.

Programming Interface Enhancements

A number of enhancements have been made to the ICM programming interface. These changes will give developers creating multimedia playback applications improved control over the codec's interactive features, especially transparency and playback scalability. There are three documents on the Indeo video home page which will be updated shortly to describe the new enhancements:

<u>Programming Indeo Video Interactive Using ICM Calls: Decompressing</u>

<u>Indeo Video Interactive Video for Windows Programming Interface Specification</u>

<u>Indeo Video Interactive Video for Windows Programming Interface Specification C source header file</u>

Custom Palettes and Dither Patterns

A number of enhancements have been added to the codec to support the use of custom colors and dither patterns when playing video back in 8-bit (256-color) mode. Tools, documentation, and sample code supporting these new enhancements will be available shortly on the Indeo video home page.

Installation Notes

The current version of the setup program installs only the 32-bit version of the Indeo video interactive codec, on Microsoft* Windows* 95 and Windows NT* machines. A 16-bit version of the codec for Windows 3.1 with a new setup program will be available shortly on the Indeo video home page.

*All other brands and names are property of their respective owners.