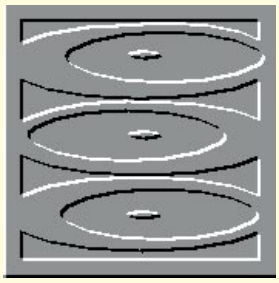

Caught in a **shower**

Panicos Georghiades and Gabriel Jacobs make their selection from the glut of new multimedia products flooding the market. Plus they ask, what will Intel's Indeo Video Interactive do for developers?

Multimedia moves so rapidly that it's a job to keep up with the shower of new products which regularly drench the market. They're nearly all interesting, though most are hardly earth-shattering. However, apart from Intel's new release of Indeo (about which lots more to come), three other new products of some significance have caught our eye this month.

The first is a piece of software which allows multimedia applications to be published easily on the World Wide Web. It comes from Asymetrix, producer of Multimedia Toolbook and 3D/FX. Asymetrix has just announced that it will support the recently announced NeScape (Web browser) inline plug-in API in all future Internet versions of its products.

We don't know how many NetScape users there are out there, but it must run into millions throughout the world. Not surprising, then, that a major multimedia company has decided to make itself NetScape compatible. Even the most short-sighted industry watcher knows that the future of the Internet must lie in full multimedia capability, and NetScape seems to be establishing itself as the standard.

The second product is for the Mac, which many believe is (as ever) struggling for its existence, despite the fact that until very recently it was so obviously a superior machine to the PC, especially for multimedia, and still is the machine of choice for developers. It's perhaps for this reason that the next version (4.2) of Adobe Premiere, the digital video editing program, has first been released for the Mac.

This new version includes Adobe's new CD-ROM Movie Maker plug-in, and adds QuickTime 2.1 and Adobe Type Manager version 3.8.3. Adobe also claims that it improves performance on a PowerMac with its native Sound Manager 3.1.

Cool storage? Sony's new CD-ROM jukebox for mass storage applications

The CD-ROM comes with Specular LogoMotion, a program for creating animated 3D logos using QuickTime and still-image files.

The final new product is what we would guess to be the biggest CD-ROM drive in the world — Sony's first CD-ROM jukebox, the CDZ-R360 (pictured above), aimed mostly at library applications in the educational, scientific, medical, service and engineering markets.

It consists of two CD-ROM drives and offers a storage capacity of up to 234Gb. That's more than we can imagine — you too, probably. Anyway, to put this in a way which most of us *can* imagine, it holds up to 360 CD-ROMs. The two drives can read all standard CD-ROM formats: CD-DA, CD-ROM, CD-ROM XA, CD-i and Photo-CD (including multisession). The robotics design is said to be very reliable (it's based on Sony's pretty-well proven audio CD jukeboxes) and is maintenance free.

The system comes with a SCSI-2 interface for data transfer and robotic control, and, for compatibility with older software, an RS232 interface for robotic control only. Included are drivers for Windows, Mac, and Novell NetWare.

The price? A cool £7,500. Not everyone's first priority, therefore, but as demand for CD-ROM jukeboxes inevitably increases, so prices will fall.

Do you need 200-odd gigabytes of storage? Well, we're old enough to remember a time when a 600Kb floppy disk on a Sirius 1 was considered far more storage space than anyone could ever imagine needing in the foreseeable future. Times, they are still a-changin'.

Intel Indeo Video Interactive: IVI — what will it do for developers?

One of the most important and exciting recent developments in the world of multimedia has to be Intel's release of a new Indeo digital video standard. Just when

you thought the dust was beginning to settle, and that MPEG-1 would be the digital video standard of the future (on computer equipment as well as domestic video), Intel makes available its new digital video format: Indeo Video Interactive (IVI). It includes features which put it technologically ahead, and therefore make it very attractive. Its key features are simply not available in other formats, and so it has to be counted as an exciting new development in the world of multimedia.

Now, care... we're not saying that IVI is about to replace MPEG, and certainly not in the domestic market. But anyone developing multimedia applications (PC or Mac) would do well to consider IVI. It's based on a compression method called Wavelet (see Ben Tisdall's article on page 251 of the December 1995 issue of *PCW*). And, as its name indicates, one of its most important features is interactivity.

Talk of interactivity in video usually brings to mind the impression of having the freedom to navigate from one point in a storyline to another, or even to make up a story by choosing one of a number of outcomes. The idea is based on that of branching: as you work your way down a tree structure, you can choose to take one road instead of another.

IVI certainly has this. However, there can be more than that to video interactivity, and IVI has that much more, such as allowing you to alter in real time image characteristics like brightness, contrast and saturation. Such functions give programmers far greater flexibility than ever before. For instance, it will now be easier to fade out a video segment at any point in real time, without having to incorporate the fade in the video clip.

There's interactive support for transparency effects, too. With this, video or graphics objects of arbitrary shape can be overlaid onto either a video or graphics, and interactively controlled during run-time via a joystick, keystroke or mouse. This means you can create video where the user can select, say, the background for a talking head.

And that's far from all. With IVI you get something called local window decode, which means you can create an independent playback window within a larger video display. Of what use is that? Well, developers can give users a view of just those portions of a video to which they decide to pan.

You also get random keyframe access. A similar facility was only last year implemented in some top-end MPEG encoders,

Question & Answers

We get fairly inundated every month with queries, mostly via the Internet rather than snail mail. We're glad to receive email messages, but if we were to reply to each one of them personally, we'd be running a full-time BBS; so we have to stick (mostly) to answering queries in the magazine. And for that we pick out those we think will interest other readers.

Image problem

How can I import a JPEG image file in Multimedia Toolbook? Although JPEG is one of the options available in the Import Graphics option in the File menu, when I try to import a JPEG file I get an error of an invalid file format. I know that my JPEG files are OK. I can import them into other applications such as PhotoShop and PaintShop Pro. I have examined the "asym.ini" file and the JPEG driver is listed in there.

John Bushby, London

The JPEG file format is extremely useful if your multimedia application has a great deal of images. Unfortunately, Multimedia Toolbook doesn't come with a JPEG import driver, so the driver you have has been put there by some other Asymetrix product — probably 3D/FX. You can get an updated JPEG driver by dialling the Asymetrix bulletin board on 00 33 1 476 29667 (France). However, you can still import JPEG files by using the Clips option and selecting a Video File. You'll have to create a stage object to display this. (At the moment, this solution works only under Windows 3.x.)

TravelMate upgrade

I would greatly appreciate your advice concerning upgrading my TI TravelMate 4000M portable. I would like to add CD-ROM capabilities as well as allowing further expansion. I know you (*PCW*) really like the portable docking station available for my computer, but frankly £399 + VAT for a two-speed CD-ROM drive, some speakers and a battery doesn't sound like good value, no matter how nice it looks. At present the best plan seems to be to

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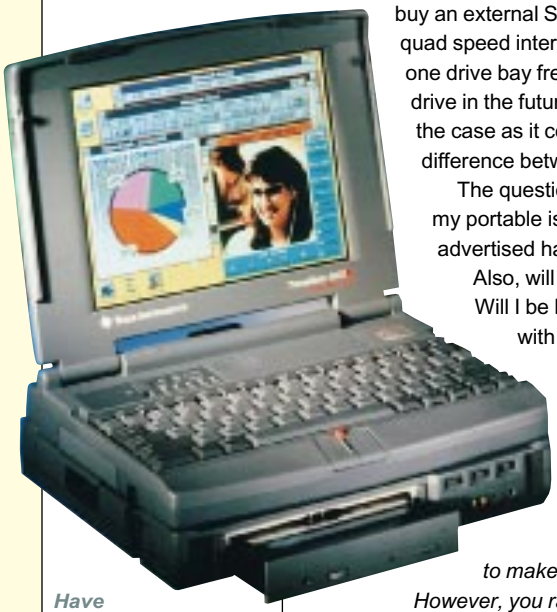
Questions & Answers (continued)



Have CD, will travel… but at what cost to upgrade the TI TravelMate 4000M?

buy an external SCSI case to hold two 5.25in drives, a quad speed internal drive to put in it, and then leave one drive bay free for maybe another hard disk or zip drive in the future. I would actually save money buying the case as it costs £60, much less than the difference between an internal and external drive.

The question is: will this work? The adaptor on my portable is SCSI-2, but the cases I've seen advertised have just been described as "SCSI". Also, will the 60W power supply be enough? Will I be limited to expensive types of hard disk with this idea? Basically, do you think it's sound?

James Purbrick, Nottingham

We didn't write the article you refer to (Docking Notebooks — October 1995 issue), and we don't know your particular portable well enough to make any definite pronouncements about it. However, you raise the important issue of adding CD-ROM (and therefore multimedia) capabilities to portables, and that of associated cost.

There's no reason why a DIY job shouldn't work provided you sort out the connections and make sure that all the electrical characteristics of the individual components you're planning to install agree with each other. When most people refer to SCSI they usually mean SCSI-2, so there shouldn't be any problem there (but check with the suppliers and get the specs in print).

A power supply of 60W may or may not be enough. Most hard disks and CD-ROM drives consume about 13 to 17W, so you should have no problem with fitting three devices. But we're sceptical about whether you can fit all four?

Finally, if price is the main problem — and it seems to be — consider that the £399 price is an RRP. The street price can be nearer £300.

And while we're at it, we should also add that the docking station includes more than you say. What about the 16-bit sound card and the microphone? What about the speakers which have a wide/narrow stereo field capability? If you shop around, the docking station may actually be better value.

but it looks as if it's set to become the norm, and IVI already offers it as standard.

What is it? First you have to be aware of one of the solutions to the problems of compressed digital video. This is that a great deal of space is saved by not compressing every individual frame of a video segment, but only the differences between one frame and the subsequent frames.

But the problem with video compression which works in this way (as MPEG does) is that when there's a sea-change between two consecutive frames (in the worst cases, cuts from one scene to another), the first frame of the new sequence is radically different from its predecessor, and the video quality plummets.

The only solution is to make the frame which starts a new sequence, into a so-called keyframe — in other words, the full frame is stored rather than the differences between it and the previous frame, thus refreshing image quality. This has not been possible so far with standard codecs (COmpressor/DECompressors) which store keyframes at constant predetermined intervals. IVI lets you place keyframes anywhere in a video stream, so image quality can be rapidly bumped up during playback.

Further enhancements to quality include a scaleable quality feature. Earlier versions of Indeo video allowed the frame rate (frames per second — about 25 are required for a really seamless motion effect) and image size to be varied, within limits, in order to take into account differing computer performance.

IVI goes a stage further than its predecessors. It's now possible for video quality to scale automatically between different quality "bands". What this means in practice is that you can offer video in a window on lower-level machines, while also allowing full-screen smooth-motion video to play back on higher-level machines like Pentiums. The idea isn't new — in fact, it's the way certain things are done on the Internet — but here it is built into a video compression system. Furthermore, the quality achievable with this system when you use higher-level machines is quite exceptional. IVI will play back at full screen — in software alone, of course — with near-VHS quality when run on a 90MHz Pentium PC or above.

Something special

Special techniques have also been applied to that other problem endemic to digital video: that of data transfer rate from CD-ROM drives which typically don't squirt the data fast enough for full-screen seamless motion video. IVI can manage such video on a Pentium PC, with excellent picture quality, equipped with a standard double-speed CD-ROM drive.

You get other goodies with IVI, too. One notable feature is password protection: developers, for instance, can assign passwords to keyframes to protect individual video clips from being altered.

A Software Developers' Kit which includes the IVI PC drivers, programming tools, and documentation is available free, says Intel, to developers. Apple QuickTime 2.01 and 2.1 drivers should be available by the time you read this.

Many firms will be offering a variety of third-party software add-ons, development tools, compression services and realtime capture cards designed to work with IVI: Adobe (for Adobe Premiere), Asymetrix (for Digital Video Producer), and Digital Video Arts (for its WakeBoard high-performance PCI Bus IVI capture and compression card). And Intel claims that many others have plans to do so, too; something we can well believe.

For more information on IVI, go to Intel's World Wide Web site at http://www.intel.com (multimedia and game developer information area), or to the Intel Forum on CompuServe (IntelA, then the multimedia library).

PCW Contacts

Panicos Georghiades and **Gabriel Jacobs** will be glad to answer your questions. Either write to *PCW*, or email **g.c.jacobs@swan.ac.uk**

Adobe 0131 4532211
Asymetrix 0800 716957
Sony Computer Peripherals 01932 816619
Intel 01793 403000