Its Been a While

Amiga (Genesi) At CES 2003

January February 2003

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CES: Everything for You
By Brant Coghlan

The annual Consumer Electronics Show (CES) is a consumer's dream come true.

With 1.25 million square feet of exhibit space and over 100,000 attendees, CES replaces Comdex as the biggest trade show in Las Vegas. The show covers all manner of consumer electronics including stereos, TV's, computers, and automotive electronics.

Walking the show floor you come across blinking lights, loud sounds, cool technology and great inventions.

The 2003 CES, held January 9 - 12, had plenty of these.

It seemed that half the booths were selling something that had flashing lights. Blinking cell phone face plates were everywhere. Even car tires had blinking lights, thanks to TireFly (www.tirefly.com). Their light screws onto your tire's valve stem and turns on when you drive. Most of the flashing lights for cars were part of their sound systems.

Car audio was a significant portion of the audio systems on display at CES.

The north hall rocked with the sounds of ultra powerful car speaker systems. With all the flashing lights, chrome, and tinted glass it was hard to see the flat panel TV screens that were installed in nearly every car.

Sirius Radio (www.sirius.com) was holding live concerts at their booth and broadcasting to their satellite radio listeners. The service is not yet offered in Canada, but a

Asha's Sunday Chats

Every Sunday evening (in most places) a few Amigans (and former Amigans hoping for the best) gather to chat and share information on a wide range of topics. Subjects will range from the Amiga (of course) to books, TV, and movies to whether or not aliens have visited our planet.

Come join us on the IRC
The network is ExodusNet
The new servers are:

irc.superhosts.net, irc.midnightrose.org, irc.codemain.com
The channel is #team*Amiga

The time(s) are each Sunday evening (9:00pmEST-11:00pmEST 2:00am Monday to 4:00am Monday GMT)

For those who can use Java chat, point your browsers at:
www.reefer.org/chat4.html
or
http://www.reefer.org/chat.html

I put my cam up Sundays so that you can see me as we chat. If you're using an Amiga, get WebVision Aminet, or, if that's down, email me and I'll send you the latest version I've got). It can live on the same screen (MUI) as AmIRC and is easy to use and setup. You can also see the cam on the Web (using a browser). The cam address is www.ashafx.com/cam. There's always a picture up, but it's only live on Sunday nights.
We also love playing with sounds. You can grab all (or some) of the sounds we are playing by going to:
http://enja.org

We have a nice group of friendly folks sharing information, help and humor as we wend our way through the Great Amiga Oddessy.

Hope to see you there!

Please repost this anywhere you find Amigans online!

Asha, asha@ashafx.com,
http://www.ashafx.com

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conversation with the company founder offered hope.

A few miles away, the high end audio people were showing their wears at the Alexis Park Hotel. These are for audiophiles that can hear beyond CD quality sound (16 bits at 44.1 kHz) and prefer vacuum tubes to digital components to achieve the perfect sound quality. (This reminds me of an old Steve Martin comedy routine "Googlephonics".) When these people get together with their computer cousins, they bring vacuum tubes back to computers. You can now get PC motherboards with vacuum tubes for their audio subsystems.

Computers at CES ranged from ultra fast gaming PC's to jewellery sized devices.

The slickest 3.6 Gigahertz P4 boxes were sporting three flat panel monitors for full immersion gaming.

For the home, several companies were sharing their vision of what the digitally enabled home will look like. Expect a central storage device for all your media content that is shared wirelessly with all the electronics in your home.

Microsoft was showing their Smart Display technology. Right idea but wrong implementation.

Notebooks were small and powerful but tablets and smaller devices had the spotlight.

Handheld PDA's had a strong presence. Palm had a disappointing showing but PalmOS based devices were easy to find. Sony's new NZ90 Color CLIÉ was the most interesting among them. The NZ90 has a builtin 2 Megapixel camera, MPEG-4 video record and playback ability, voice recorder and MP3 player. Bluetooth is built in and Wi-Fi (802.11b) is an option. Colour PocketPC based devices are coming down in price, lead by Dell's Axim. Sharp was aggressively showing their Zaurus PDA, the device that at one point was going to run Amiga DE (now called Amiga anywhere). The Zaurus, running Linux, creates a rich multimedia environment for a PDA. Some key wireless software is already available for the Zaurus and Sharp is looking for more developers. Standing on the sidelines, not caring which PDA wins out, Rhinoskin was showing their cases for all handhelds.

Many devices on display were smaller than the handhelds.

Every variety of MP3 players was shown. Perhaps the best of the bunch was the ultra light weight, feature packed, iRiver players (www.iriveramerica.com). Bantam

(www.bantamusa.com) also had some interesting designs for MP3 devices. Several manufacturers were also expanding their line of hard disk based MP3 devices and introducing hand held photo and video players.

I was a little surprised that the devices followed closely the features pioneered by Archos and fine-tuned in the Apple iPod. We will have to wait for future devices to offer wireless connectivity, which I think is the real enabling technology for these devices.

SPOT is an interesting new type of wireless device coming this fall from Microsoft. SPOT devices display news, sports, and weather information pulled from FM radio signals. Initially SPOT technology will power watches, but expect to see other devices by the end of the year. For a monthly fee, you can have your Outlook appointments and even email forwarded to your SPOT watch. It may turn out that SPOT is a dog, but it offers a glimpse at what our wireless future can offer and also shows that Microsoft can innovate.

For those looking for cool technology, CES had plenty to offer.

Sony was showing their AIBO robotic dogs and an experimental humanoid robot SDR-4X. At just over half a meter high, SDR-4X looks like a toy but it can walk, dance, see, and hear. Evolution Robotics (www.evolution.com) was also showing off a kit to turn your laptop into a robot and a complete wheeled robot, ER2, for entertainment and robotic development. Refinement Canada (www.technosonic.com) was displaying hobby robot kits from Robo Block (www.roboblock.com).

Infrared Imaging premiered their NightMax viewer, which they claim uses a new form of night vision technology. The Lightbook Company (www.litebook.com) from Medicine Hat Alberta was showing their device to treat jet lag and seasonally affected dissorder using light. For those suffering from

MorphOS Features at a glance:

* Native PowerPC Operating System
* Supports Pegasos and Amigas fitted with PowerUP cards
* Runs Native PPC and Amiga OS RTG Applications
* 68K JIT compiler runs applications at up to 75% of native PPC speed
* Hardware 3D support (3dfx, 3DLabs, SiS + more to come)
* New Ambient Desktop with 32 bit colour support
* Fully Skinnable user interface
* MUI Object Orientated GUI Toolkit
* Media Player (Frogger)
* Multi-threaded Image viewer (MysticView)
* Web browser (Voyager)
* PDF viewer (APDF)
* Supports an extensive range of Printers (TurboPrint v7)
* TCP/IP Stack for networking.
* Built in Software Development Kit
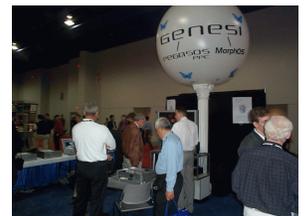
* AHI Audio
* USB Support
* Multiple 64 bit File systems supported including FFS2 & SFS
Core OS
Quark - State of the Art micro-kernel designed for:
High Super/Usermode switch speed
Low interrupt latency
IntThread and Int PCode abstraction
Memory protection
Symmetrical multi processing (SMP)
Task/Thread and Clan/Chief model
Resource tracking
Asynchronous message system
Virtual memory (optional)
Recursive Memory Management
Distributed computing
No access to Kernel structures
Clean design with an elegant API
HAL - The Hardware Abstraction Layer
Makes MorphOS hardware independent, through the following points:
Determines the CPU types, the number of CPUs and clock speed.
Scans the ABox Zorro I/O ports for Zorro-II and Zorro-III cards and configures them.
Finds local hardware (CVisionPPC, SymbiosPPC, PCI bus)
Creates a resource map for the Quark microkernel.
Starts the kernel resource.
Q-Box
Exception Server
Master-Clan Server
Address Server
Config Server, using the resource map built by the HAL
CPUTime Server
A-Box
ABox is a multithreaded application running as a Quark process with its own memory space.
It contains a PowerPC native heavily extended reimplementation of the OS known from your Commodore A500, A1000, A1500, A2000, A3000, A3500, A3500T, A4000 and A4000T systems.
 A-BOX Components
Static 680x0 emulator
It emulates 680x0 instructions. All 68881 and 68882 opcodes are supported too.
The most used FPU instructions are replaced with

emulation opcodes easier to decode. Some unused features are not emulated.
All in all, the emulator is twice as fast as one without these special methods.
Trance - Just In Time 68k compiler (JIT)
Trance translates 68k program code to native PPC code. Translated code is kept in memory, so when running same code again, translated code can be run directly.
Several optimizations are performed during the translation. This allows to get incredible performances never achieved with other current JIT technology implementations.
Multiple 68k instructions are combined to single PPC instruction, non needed parts of code are removed
Etc.
Typically, 68k applications running with JIT get least 50% of native PPC speed and up to 75%.
For example the native PPC rc5 decoder "dnetc_ppc -bench rc5" does 755kkeys/sec, and emulated 68k version "dnetc_68k -bench rc5" does 542kkeys/sec. (csppc 604e/233)
Even the slowest BlizzardPPC/603e is able to run 68k applications faster than any existing 68060.
Condition code flow analysis which allows us to remove expensive CCR calculations when not needed.
"Transput-bound" and "Compute-bound" tasks are handled differently:
* Compute-bound tasks run in fully translated mode. Trance is called from the task context to translate next sequence of code, then execution jumps to that translated code.
* Transput-bound tasks spend most of their time waiting for user input or some other signal. It's important that when signal a arrives, code execution starts immediately, without having to wait for code to get translated first. So, if translated code is not available, the code is run using normal "static" emulation. These emulated functions are profiled to see which are used most often, then those functions are translated later when the system is idle.

* The main point of this arrangement is not to add any delays or latency to the system.
PowerPC Compatibility Libraries
ppc.library - PowerUP compatibility layer

AMICUE
Music SIG
Contact Larry Bolch
484-9879

WOSEmu - WarpUP compatibility layer
Exec: Mixed mode allowing 68k and PPC code running in the same task. No exception and no task-switch to go from one mode to the other one.
Task memory pool: Better multithreading support
SystemV ABI support, using fpu registers for system functions is possible
New functions to get and set tasks states (stack, priority...).
New functions for better memory handling
New hook and query functions to internal exec lists
graphics.library: RTG
New functions for alpha blending,
Special visual effects (used by Ambient...)
True colour
Extended draw primitives.
diskfont.library:
Anti-aliased fonts in development.
FreeType2 - Vector fonts library:
Supports Type0, Type1, Type42, TrueType, and OpenType fonts.
Anti-aliasing support.
Datatypes:
Datatypes are a means of allowing programs to handle different data formats without having to directly support them themselves.
Currently supported:
JFIF-JPEG
PNG
IFF-ILBM
BMP
GIF
PCX
PBM
Icons
Text
Binary
Shell and Console
Improved resident commands
* If: New switch NOREQ/S, hides possible requesters (IF EXISTS foobar: NOREQ)
* Path: Support for multi assign ADD/REMOVE.
* Resident: DEFER/S, program is made resident when first used
* SetEnv: SAVE/S option to permanently save variable in ENVARC:
Support for #! un*x style script execution
Unlimited buffer lengths (command line, variable expansion, quote expansion), no fixed limits
Configurable WShell compatibility features
Fully configurable menus, toolbar, and key shortcuts
On the fly MorphOS->un*x path transformation, if needed
Configurable tab-completion for commands/files/dirs
Review buffer with scrollbar (like KingCON)
Powerful Multi pages mode:
* Several shells can run in the same window console.
* Graphical button to switch between them or create new ones.
Shell can be detached and reattached to another console.
Filesystems:
FastFileSystemII, fully compatible to FastFileSystem
SmartFilesystem
Other filesystems (like PFS3) run emulated
Lowlevel Graphical tools for FFS and SFS (Salvage, Fix in place for damaged volumes, etc...)
CDDrive - CDROM filesystem:
ISO9660
Multisession
Rockridge
Joliet
CyberGraphX RTG compatibility:
Ability to use old CyberGraphX v4 drivers (on

PowerUP hardware).

Intuition user interface:

Fully skin able GUI, using different bitmap for each element

Shipped with several skins

Opaque Window moving

Window Iconification

Off-screen Windows

screennotify.library etc...

Ambient - Powerful MorphOS Desktop

MUI based

Fully asynchronous, multi-threaded design, you are never blocked

Does not require icon.library

Built-in original icons support

Built-in newicon support

Built-in OS 3.5 Glowicon support

New true-colour PNG 32bits icon format, with alpha channel support for transparency

Fast icon caching system

File notification

True-colour rendering (no pen allocations)

Support for deficons

64-bit arithmetic to handle big storage devices

Localized

ARexx port (optional)

Built-in disk formatting

Visual effects: transparency, blurring, colour imposing, alpha channels.

Built-in wbstart.library

New Preferences System

Highly flexible shared class system.

Possible to embed in MUI applications.

All system preferences can be edited in a single MUI tool.

Or run as a standalone component.

AHI v6 - The Standard Audio Library

AmiTCP v5 - TCP/IP protocol stack

Friendlier logging system with global filter etc.

Cache for name server replies

Sana-II 2.0 support (with DMA buffers extension)

Full PPPoE support for Cable and ADSL

Full BOOTP support

Packet filtering

Access control for server programs

Automatic BOOTP configuration utility

Standard network tools (ping, traceroute, resolve, finger, netstat, etc...)

Telnet client

RSH client

Fully controllable through ARexx

User Manual

InstallerNG:

A lot of new useful functions and tooltypes

Plug-in system to use other GUI toolkits (MUI, etc...)

MUI - Object Oriented GUI Toolkit

Adjustable bubble help sizes and look and floating bubble mode

Separate preferences for MUI settings and external MCCs. Speeds up start-up time

"Jump Screen" menu function to quickly move your application to another screen

Improved mouse movements in virtual groups

New menu system. Configurable and can be embedded in windows

Support for wheel mice

Now uses video memory whenever possible to improve performance

Large speedups and optimizations everywhere

MagicASL - Nice MUI Requesters

3D Graphics Support:

Rave3D - Low level 3D Graphic Drivers (v1.6 implementation)

Rave is a low level 3D driver API. Its design has been discussed and defined by major key graphic companies like ATI.

The MorphOS version is implementing most of it and is adding some extensions like automatic and transparent double buffering,

ZBuffer access... It is completely integrated with the 2D drivers system.

Features of the Driver API:

* Vertex array

* Global states

* Multi-Texturing

* Fogging

* OpenGL blending modes

* Antialiasing

* Compressed textures

* Trilinear texture filtering

* Mipmapping

* Texture memory access

* Textures can be bound on a screen bitmap

* Deep Z buffering (greater or equal to 24bits per pixel)

* Scaled draw context

* Fully extensible via tags, including the addition of functions.

* Complete blackbox design.
Hardware Drivers:
* 3dfx Voodoo3 (Avenger)
* SIS 6326
* 3DLabs/TI Permedia2 and 2v
* CVisionPPC (Permedia2)
* BVisionPPC (Permedia2)
Jungl
Highlevel 3D Graphics Library, (compatible with the OpenGL 1.4 API)
Goa - Full Warp3D emulation
Pegasos specific software:
SmartFirmware - Industrial OpenFirmware IEEE 1275-1994 implementation
Forth engine interpreter.
Support for PCI/AGP cards using Forth BootRom
Support for PCI/AGP cards using x86 BIOS, through a x86 emulator
Support for standard RDB and MBR partition table styles
Support for FFS, SFS, AFS, PFS, PFS2, PFS3 filesystems. The Operating System can boot from anywhere.
Complete control over:
- Boot device (hard drive, cdrom, network, etc...)
- Autoboot functionality
- Input device (keyboard, serial terminal, etc...)
- Display resolution
- etc.
Operating Systems supported on Pegasos:
MorphOS
Linux (Debian, SUSE)
MacOS9 and MacOS X, (via Linux/MacOnLinux)
Hardware we currently support:
Pegasos (G3 and G4)
DCE/Phase5 CyberstormPPC (PowerPC 604e)
DCE/Phase5 BlizzardPPC (PowerPC 603e)
PCI Bus boards
DCE GRex4000
DCE GRex1200
Matay Prometheus (Matay is currently working on it with us)
Graphic boards (2D)
ATI Radeon 9000 Pro (RV250)
ATI Radeon 8500LE (R200)
ATI Radeon 7500   (RV200)

ATI Radeon 7200   (R100)
ATI Radeon 7000VE (RV100)
3dfx Voodoo5 5500 (VSA-100)
3dfx Voodoo4 4500 (VSA-100)
3dfx Voodoo3 3500 (Avenger)
3dfx Voodoo3 3000 (Avenger)
3dfx Voodoo3 2000 (Avenger)
SiS 305
SiS 300
SiS 6326
3DLabs/TI Permedia2
3DLabs/TI Permedia2v
DCE/Phase5 CVisionPPC
DCE/Phase5 BVisionPPC
Visionary, modern support for TV/Video cards
Visionary is a "remote control" program with a skinable GUI.
Sound drivers:
Pegasos onboard AC97 sound chip (Sigmatel STAC 9766)
Terratec 128iPCI (ESS Solo-1)
Terratec 512i digital (FM801)
Vivanco (FM801)
Network drivers:
Realtek RTL8201 10/100MBit, (Phyceiver, like found on the Pegasos)
Realtek RTL8139C 10/100MBit
Realtek RTL8029AS 10MBit
VillageTronic Ariadne2 10MBit
IndividualComputing XSurf 10MBit
PCMCIA CNet NICs (A1200 PCMCIA slot only)
SCSI
Symbios 89x (+ current models)
Symbios 810, 815, 825, 875
Symbios 710, 770
Symbios 770 SCSI, like found on CyberstormPPC and BlizzardPPC
DKB A4091
Commodore A4000T on board SCSI
IDE
Pegasos onboard IDE ATA100 controler (VIA8231)
Commodore A1200/A4000 internal controler generic PCI cards
Poseidon - Complete USB protocol stack
See below for details

Impressions from CES 2003 in Las Vegas

Daniel Miller posted some more information about CES 2003 in Las Vegas:

"Bill and Raquel hosted a reception at Bally's on Friday night. I wasn't sure I wanted to go until I found out that "reception" meant "party at their hotel room." I ended up going of course as did about 35 people and everybody seemed to have a good time. Several of Bill and Raquel's friends were there. Multiple Genesi lawyers were there. The Pegasos-USA web-team was there. David Green of Phoenix Developer Consortium, Felix Schwarz of IOSpirit, Samuel Rydh of MacOnLinux, all the usual Genesi suspects, and a bunch of other people were there.

Bill Buck is almost always "on," the man can talk, and he was trying to bring over some new programming talent to the Genesi team. He could write a self-help book with comments like "you've got to accelerate your ambition." Thierry and I swapped travel stories, I advised him that Alaska was very beautiful, and he talked about his year in America (he liked it, but had to go back). Damien McKenna and Nate Downes and their wives were on hand. These are the guys we are depending on to help make things happen in the USA. They are long time Amigans, and now they on board with the revolution like all of us.

The international makeup of the Genesi team was evident, with French, Swedes, Danes, Drunkards, Germans, and Americans on hand. Just kidding about the Drunkards, ahaha I stole that from Bogie in Casablanca. All the Europeans speak very good English. Felix Schwarz has a great vocabulary, but I have to say that Mark Olsen (bigfoot) speaks the best English because he keeps it simple: "How much longer do I have to work. I need a lot of sleep. What time is it? I'm really hungry." Bigfoot could pass for an American!

They didn't have any beer but the champagne was awesome, and I guess the wine was. The young people seemed to be playing by the rules and drinking sodas and water. The food was great. The view was terrific; we observed the Bellagio from our high perch. The Bellagio may be the most beautiful hotel in Las Vegas. What's that Stevie Winwood song? "Back in the high life again, all the doors that closed one time will open up again. We'll drink and dance with one hand free, let the world back into me... back in the high life again."

Okay, enough of that, let's get back to the really relevant stuff: Felix Schwarz of IOSpirit was very effective in demonstrating his products, particularly fxPaint. This is a really great program, I swear I did not know how great this was. I am somewhere back in DPaint IV land, but that is Cro-Magnon Man and fxPaint is Homo Superior. You can paint and do all these, well, effects. It is really nice and has a lot of features. I was asked if it was a PhotoShop knockoff, but no way. This loads much faster and is more responsive.

Samuel Rydh of MacOnLinux (.org) was there showing off his product. What can I say about this? It does what it is supposed to do. I tried PowerPoint and other Office applications. I guess you can run almost all Mac stuff on the Pegasos if you run MacOnLinux. You have to get a legal copy of MacOS on there of course. Maybe you get this from a dead Macintosh, I don't really know. There was also a Pegasos running a straight Debian distribution with KDE desktop. Enough said.

Now I said that I was around all this stuff for two days and didn't witness any crashes or glitches. That is totally true. But I was not stress-testing all this stuff. I am not Tom's Hardware or PC Magazine running expansive trials okay? Don't buy ten, have a crash and then say "Daniel Miller told me they never crash." Read lots of informed opinions and research stuff, then make a purchasing decision.

Games: Birdie Shoot is so hilarious and fun. It has these great high resolution graphics. You shoot funny-looking birds but it is not really violent, because there is no blood or explosion or anything. They just fall down or nose dive to the ground. We joked that you are merely tranquilizing them,

carpal tunnel syndrome, Keybowl (www.keybowl.com) offers relief with their OrbiTouch keyless keyboard.

The best of the inventions shown at CES will affect our lives.

Curved thin film display screens and organic light emitting diodes (OLED), on display at Toshiba's booth, will affect how future devices are designed.

A glimpse at the future diversity of uses of wireless technology was given by a futuristic juggling and musical performance by the Flying Karamazov Brothers at Craig Barrett's (Intel CEO) Keynote address. The demonstration, courtesy of MIT's Center for Bits and Atoms, had juggling clubs changing colour based on their wireless connections and music being performed by gestures tracked by wireless sensors.

In the immediate future, the KidSmart smoke detector from Smart Safety Systems (www.kidsmartdetector.com) will save lives. In case of a fire, the detector will play your own recorded a message giving your children explicit instructions in how to get out alive. The Amiga's voice synthesis and audio playback was used in the early research that eventually led to this product.

The Amiga had another presence at CES, but I didn't realise it at the time. I stopped by the Genesi booth to see the OS and PowerPC hardware they were showing off. I didn't make the connection with MorphOS and the Amiga, so my interest was rather shallow. To the casual observer, it appeared to be another OS for a media serving box. They will have a tough fight with current Linux based solutions and Microsoft's upcoming Home Media Center. As always, the Amiga is an underdog.

Perhaps CES 2004 will feature more Amiga technology based on Amiga anywhere. Time will tell.

Visit the AMICUE Web Site at:
http://www.amicue.org

Bigger But Late

January and February Newsletter has been combined because of a delay in getting our CES report from Brant, our report who was at CES.

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because they are sick and in need of treatment. If you are not averse to violence, Quake seemed to be running very well. 1 or 2 I don't know, they were both on there. Software Tycoon and Feeble Files were on there too but I did not try them.
Okay I am sick of writing and I used up all my notes. If there are any MorphOS news junkies out there we should have some other comments and pictures at amiga-news.de toward the end of the week, so look there at that time."