On the Horizon

By William F. Zachmann

Seminar Reveals IBM's Proprietary Path for Micro Channel, Extended Edition

IBM hosted a PS/2 and OS/2 Consultants Seminar in Boca Raton, Florida, this month for some 35 industry gurus who, like myself, don't seem to be able to get a real job but instead somehow scratch along pontificating about the industry. It has long seemed to me a mark of Tandy CEO John Roach's basic sanity that he pretty much views us as useless parasites to be humored at best but preferably avoided.

IBM, however, was nice enough to invite us down to Florida for a couple of days to tell us all about PS/2 and OS/2.

This wasn't one of those arms-length, second-hand, IBM Educational Center events. Presentations were made by the people who are on the line for the design, implementation, and sales success of PS/2 and OS/2 products. From IBM vice presidents Bill Lowe (who is also president of the Entry Systems Division) and Terry Lautenbach on to people like chief Micro Channel architect Chet Heath and ESD laboratory director Lee Reiswig and his OS/2 Extended Edition product managers Dave Harrington, Mick O'Dell, and Pat Motola, IBM had the people responsible for the products tell the story.

In addition, Microsoft vice president Steve Ballmer, Borland founder and CEO Philippe Kahn, and Cumulus president Marty Alpert were on hand to offer third-party perspectives. The result was an impressive array of people in attendance.

While much of what was covered was already widely available information, the need to go over it was made evident by some of the questions posed by attendees. That, for example, it was still necessary for both IBM and Microsoft to reaffirm that their respective versions of OS/2 Standard Edition 1.0 and 1.1 really are the same and that the OS/2 Presentation Manager and Microsoft Windows really do offer essentially the same user interface indicates how deeply rooted some misconceptions are.

The meeting's most important message, however, was that IBM clearly intends OS/2 Extended Edition (which will be available *only* from IBM and which will tie into yet-to-be-announced hardware that will run *only* on IBM's proprietary Micro Channel architecture machines) to become a reason for users to buy their personal computers only from IBM.

The reason for that is quite simple: Despite all the talk about PS/2 clones and PS/2 chip sets, the folks at IBM believe that nobody is going to legally build a personal computer with a Micro Channel bus unless IBM decides to let them. I believe they are correct. IBM's "intellectual property rights" in the form of patents, copyrights, and so forth make it effectively impossible for any other vendor to build a Micro Channel-compatible machine without landing in court at the losing end of a lawsuit from IBM.

Last April 2 lots of people expected to see PS/2 MCA clones by fall Comdex in November. There still aren't any nearly a year later, and don't hold your breath waiting for them; there aren't going to be any. That is not until IBM decides to let somebody build them.

IBM's Micro Channel architecture, like DEC's VAX-BI bus or Apple's Macintosh, isn't going to become a commodity product the way the XT and the AT did. Even if IBM eventually decides to license it, I guarantee you they will do so very selectively. What's more, they will do so in a way that ensures both that IBM receives significant revenue and that the intense price competition that characterizes XT- and AT-compatible systems won't be repeated.

The IBM folks feel that they have every right to do this, and I've got to say I agree with them. They aren't under any obligation to spend money developing de facto standards that then fall prey to intense competition. They are entitled to protect their intellectual property rights.

Users, on the other hand, should make their choices with a realistic understanding of what those choices mean to them. Choosing the IBM Micro Channel architecture means choosing a proprietary architecture that will not be subject to as much competition as the AT-standard bus machines. There is nothing wrong with that. My personal preference, however, is to continue to take advantage of the more competitive environment of standard architectures. As long as the Micro Channel remains proprietary, I'd rather stay with the AT bus-compatible alternatives. What do you think?

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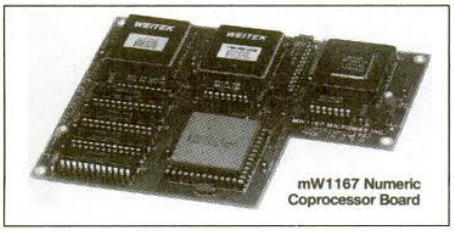

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MicroWay 80386 Compilers

NDP Fortran-386 and **NDP C-386** are globally optimizing 80386 native code compilers that support a number of Numeric Data Processors, including the 80287, 80387 and mW1167. They generate mainframe quality optimized code and are syntactically and operationally compatible to the Berkeley 4.2 Unix f77 and PCC compilers. MS-DOS specific extensions have been added where necessary to make it easy to port programs written with Microsoft C or Fortran and R/M Fortran.

The compilers are presently available in two formats: Microport Unix 5.3 or MS-DOS as extended by the Phar Lap Tools. MicroWay will port them to other 80386 operating systems such as OS/2 as the need arises and as 80386 versions become available.

The key to addressing more than 640 kbytes is the use of 32-bit integers to address arrays. NDP Fortran-386 generates 32-bit code which executes 3 to 8 times faster than the current generation of 16-bit compilers. There are three elements each of which contributes a factor of 2 to this speed increase: very efficient use of 80386 registers to store 32-bit entities, the use of inline 32-bit arithmetic instead of library calls, and a doubling in the effective utilization of the system data bus.

An example of the benefit of excellent code is a 32-bit matrix multiply. In this benchmark an NDP Fortran-386 program is run against the same program compiled with a 16-bit Fortran. Both programs were run on the same 80386 system. However, the 32-bit code ran 7.5 times faster than the 16-bit code, and 58.5 times faster than the 16-bit code executing on an IBM PC.

NDP FORTRAN-386™ $595
NDP C-386™ $595

MicroWay Numerics

The **mW1167™** is a MicroWay designed high speed numeric coprocessor that works with the 80386. It plugs into a 121 pin "Weitek" socket that is actually a super set of the 80387. This socket is available on a number of motherboards and accelerators including the AT&T 6386, Tandy 4000, Compaq 386/20, Hewlett Packard RS/20 and MicroWay Number Smasher 386. It combines the 64-bit Weitek 1163/64 floating point multiplier/adder with a Weitek/Intel designed "glue chip". The mW1167™ runs at 3.6 MegaWhetstones (compiled with NDP Fortran-386) which is a factor of 16 faster than an AT and 2 to 4 times faster than an 80387.

mW1167 16 MHz $1495
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Monoputer™ - The INMOS T800-20 Transputer is a 32-bit computer on a chip that features a built-in floating point coprocessor. The T800 can be used to build arbitrarily large parallel processing machines. The Monoputer comes with either the 20 MHz T800 or the T414 (a T800 without the NDP) and includes 2 megabytes of processor memory. Transputer language support from MicroWay includes Occam, C, Fortran, Pascal and Prolog.

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[1]Includes Occam

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Phar Lap Tools $495

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FASTCACHE-286 12 MHz $399
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