Intergraph acquires Clipper division

Intergraph Corp. has acquired the Advanced Processor Division of Fairchild Semiconductor Corp. from National Semiconductor. The acquisition occurred simultaneously with National's purchase of Fairchild from Schlumberger Ltd.

The APD developed and markets the Clipper 32-bit microprocessor, which is part of the core of Intergraph's primary family of engineering workstations. The APD design team, as well as all intellectual property rights to the Clipper, have transferred with the division, which is now called the Intergraph Advance Processor Division.

Fujitsu Corp., which supplied Clipper chip sets to Fairchild in the past, will continue to manufacture chip sets for Intergraph.

APD's focus will remain on components and systems software, to produce new products in the Clipper line as well as supporting products. The division will work with independent hardware and software vendors to provide Clipper-based board products and Clipper application software.

To do that, the division must function autonomously from the parent corporation, according to James Meadlock, Intergraph's president. "APD will not be a captive design group," he said. "We are very serious about selling Clippers by themselves." Meadlock added that significant announcements will be made in the coming months to substantiate this position.

J953 gets I·R award

Teradyne's J953 VLSI test system was given the I·R award as one of the top 100 most-significant technical products of the year. The award, given by Research & Development magazine was presented at the Los Angeles Museum of Science & Industry. Accepting the award was Edward Rogas, Jr., vice president and general manager of the Semiconductor Test Division.

VLSI Research resegments ATE market

In its recent report on the semiconductor manufacturing industry, VLSI Research market analysis firm outlined a complete resegmenting of the market for logic and linear test systems. The California-based market analysis firm hopes the new categories will incorporate new technologies required for testing current and future VLSI components, and will serve the industry for the next 10 years. The firm plans to use the new classifications in annual market reports published for ATE and other equipment companies, venture capitalists, industry magazines, and other subscribers.

According to Jerry Hutcheson, president of VLSI Research, the overhaul was needed "because logic and linear component test equipment has changed so much that the old categories have become cumbersome to everyone." Categories like dedicated tester, general-purpose tester, and bench-top tester—which the company used to label testers of the sixties and seventies—no longer describe current test equipment.

Even the upgraded classifications of the early eighties—dedicated, focused, large-scale, and very large scale—are no longer appropriate. Far too many testers fall in the last category, for example, to make it a useful classification.

To replace these labels, VLSI Research has devised a whole new class definition scheme that is broad enough to segregate markets while allowing products to be differentiated through equipment features. Logic test system have been completely revised into a single new category consisting of eight classes. Linear testers are divided into two application groupings: traditional and mixed-signal.

The new logic category being used consists of a vector quantity that VLSI Research has termed MDCR, or maximum data channel rating.

Logic test systems—being digital in nature—tend to increase in complexity in a binary fashion, doubling with each new pair of bits added on the control bus. Consequently, pin capability tends to increase from 16 to 32 to 64, and then to 128, 512, 1024, or 2048.

Frequency tends to increase from 5 MHz, to 10 MHz, and then to 20 MHz, 40 MHz, and so on to 80, 160, or 320. The new MDCR rating is merely a recognition of fundamental groupings already within the equipment architecture.

The method VLSI Research has devised is to use the maximum number of data I/O channels available—whether single or dual—together with the maximum digital frequency attainable—whether single or multiplexed. Thus, a 20-MHz, 128-pin logic tester capable of 40 MHz in multiplex mode and 256 pin drivers in split I/O mode is classed as a 256×40 tester, that is, channel size × speed.

This measure is more basic to the logic tester market than, say, a measure based on equipment features. Moreover, by using broad categories, individual suppliers can use special feature sets as competitive qualifiers within a class without the need to introduce a new market category.

A similar but more complicated procedure is used for linear testers. The first step is to categorize linear testers by two main groupings: traditional applications and mixed-signal applications. The next step is to determine the degree to which the
MCC launches superconductivity program

Several research efforts in the US and abroad have shown that superconductors can operate at temperatures above that of liquid nitrogen. Recognizing the potential of this technology, for electronics, the Board of Directors of the Microelectronics and Computer Technology Corp. has launched a study of high-temperature superconductors in electronic applications.

The program, which was proposed last June and officially begun in November, is under the direction of Harry Kroger, MCC's technical director of the current Semiconductor Packaging and Interconnect program. Work on the new program is being done in two phases. Phase I includes:

- modeling key technical issues in electronic applications, such as trade-offs of copper vs. superconductors; the performance of hybrid semiconductor/superconductor systems; and the use of superconductors in active devices
- evaluating technology developments and determining requirements
- conducting experiments to demonstrate the feasibility of high-temperature superconductors in electronic applications

Phase II, which is expected to start in late 1988, will consist of follow-up on projects from Phase I that are deemed high priority. Work will include materials preparation and patterning and processing techniques for practical electronic circuits. It will also cover device R&D for novel applications.

The program is open to non-MCC shareholder corporations. Phase I participation is $100,000 per shareholder company and $100,000 plus an annual associates membership fee of $25,000 per non-MCC shareholder company.

For more information, contact W. Statesbery, MCC, 3500 West Balcones Ctr. Dr., Austin, TX 78759; (512) 343-0978.

tester can operate as a mixed-signal tester. Mixed-signal testers are then loosely classified further by their digital domain capability and their analog capability. MXSL1, MXSL2, and MXSL3 are the classes used, with each category satisfying a set of features that become more complex as the category number increases.

MXSL1 has a minimum digital MDCR rating of 48x10 and a minimum analog frequency signal capability for testing devices to 20 MHz. Testers in this category include audio IC, communication IC, and dac/adc IC testers.

MXSL2 must have all MXSL1 capabilities plus FFT or equivalent and a waveform digitizer/synthesizer combination. Its MDCR rating must be 64x20 minimum. Most testers fall in this category.

MXSL3 fills the upper end with 100+ MHz analog test capability and an MDCR rating of 64x100.

For more information on the new market classes, contact J. Hutcheson, VLSI Research, 1754 Technology Dr., Ste. 117, San Jose, CA 95110; (408) 289-9983.

GenRad gets JDS follow-on contract

Jaguar Cars of Coventry, England, has awarded another contract, this time for £9 million, to GenRad for further development of the Jaguar Diagnostic System and for software applications support. The first Jaguar contract for £13 million—the largest in GenRad's history—was for 775 JDS's for use in Jaguar's XJ6 models.

Cirrus Designs, Ltd., a GenRad subsidiary in Manchester, England, is looking into non-custom automotive diagnostic systems with other automotive manufacturers in Europe and the US.

IEEE D&T roundtables

The roundtables that have been appearing in IEEE Design & Test from time to time have been well received by our readers. For those unfamiliar with D&T and its departments, "D&T Roundtable" features discussions with industry representatives and researchers on topics of interest to the design and test community.

Past discussions include such topics as industry-university consortia and future joint efforts, logic synthesis in design, high-performance testers, and point accelerators vs. general-purpose machines. Planned discussions include design automation standards, the design and use of test fixtures, and object-oriented programming and CAD.

The following groups have donated resources in the planning and execution of the roundtables (the issue of D&T carrying the roundtable appears after the group that helped support it).
- Computer Society Test Technology TC: Apr. 1986, Feb. 87

We are looking to our readers for constructive comments on the roundtables and on how we can better serve the need for current information on issues of concern. Please send any and all suggestions for topics and panelists, or on improving past discussions to C. Radke, Roundtable Editor, IBM, AR1, Rte 52, Hopewell Junction, NY 12533, or call (914) 892-2957.

Foundry production of LSI GaAs ICs

Vitesse Semiconductor and Ford Microelectronics have an agreement for each to provide alternate sourcing in the foundry production of custom LSI gallium arsenide ICs.

Ford and Vitesse share similar company charters of designing, manufacturing, and marketing digital LSI enhancement/depletion GaAs circuits for commercial and military markets. To date, other GaAs IC manufacturers have focused on producing small- to medium-scale integrated devices using the depletion mode process only.

The primary advantage of the E/D process is lower power consumption, which translates into a less expensive, lower power system.

The alternate sourcing agreement, which will offer Ford and Vitesse customers a choice of vendors and the assurance of backup supplies, gives the two companies the ability to support a consistent design—a breakthrough in GaAs technology implementation.

New organization in Sematech

US suppliers of semiconductor equipment and materials have joined together as a new part of Sematech, the recently formed consortium in the US semiconductor industry.

The group, called Semi Sematech, is dedicated to developing advanced manufacturing technology for the semiconductor industry and will pass on concerns of the equipment and materials industry to Sematech. It will also cooperate with SEMI in areas of mutual interest, such as standards and educational programs.

Activities in the next few months will be collaboration with Sematech to organize and conduct technology workshops, generating specifications, and identifying key development projects needed to meet Sematech's goals. Members will be able to compete for equipment and materials acquisition and Sematech contracts, according to a Semi Sematech spokesman.

For more information, contact Semi Sematech, Box 321, 1016 E. El Camino Real, Sunnyvale, CA 94087; (415) 940-6956.

LSI Logic chip set certification

LSI Logic Corp.'s 1750A military microprocessor chip set has passed a US Air Force certification test for precise conformance to MIL-STD-1750A. The certification means that the chip set can be used in a variety of electronic systems sold to the USAF and other military agencies.

According to LSI Logic's program manager for standard products, Rick Rasmussen, it is the first time that a single-chip CPU has been qualified along with a dedicated peripheral chip that handles memory management and other functions.

The chip set was certified in only five days—one-third the normal time allotted for such tests. Rasmussen feels that the rapid turnaround is the result of exhaustive simulations done by the company's ASIC design software tools during product development.

P-CAD third-party directory

Personal CAD Systems is publishing a directory of third-party companies that offer products or services compatible with PCAD's products. Called P-CAD Third-Party Partners Directory, the book lists service bureaus, authorized training centers, and PCAD-compatible products such as interface software, libraries, special report generators, graphics drivers, and printer plotters form more than 60 vendors throughout the world.

For more information, or to be included in the directory, contact T. Marcacci, Third-Party Partners Program Manager, 1290 Parkmoor Ave., San Jose, CA 95126; (408) 971-1300.