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NETgain

THE LATEST THE INTERNET HAS TO OFFER



Web Sites Worth Mentioning

www.boardbuyers.com BoardBuyers.com has developed a calculator to assist in measuring the cost of prospecting for new customers, which can represent up to 50% of the total cost of sales. After filling in a calculating form, managers receive instant results. The Web site also has a directory of companies that purchase unpopulated printed circuit boards, so that sales professionals can locate best-fit prospects.

www.airproducts.com Air Products has introduced three new country Web sites for its growing China, Taiwan and Thailand markets. With 50,000 customers in nine countries throughout Asia, the native language Web sites aim to bridge traditional language barriers. Each site is managed at the country level, with postings of the latest news and developments.

www.t-yuden.com Taiyu Yuden is offering new design tools for designers of wireless local area networks, car navigation systems, base stations, cellular handsets and other electronic equipment free of charge on their Web site. The company offers free device models of its surface-mount components in the component library for use with Ansoft Designer v.1.1, an electronic design automation (EDA) simulation tool. S-Parameter data files are also available for free download.

www.poetry.com Since February is a month for love and poetry, check out this Web site for inspiration. You can find the 100 Greatest Love Poems, regular poems and a variety of haiku. The site can even help aspiring poets to find rhymes and synonyms.



Industry Resources

www.pcdandm.com/pcdman/resource/pcb_basics.shtml The fourth edition of *Printed Circuit Board Basics* is now available. From design and manufacturing to purchasing to considerations for managing the business, concepts are explained in simple terms. This edition contains an updated primer on single-, double-sided and multilayer PCB manufacturing processes; a review of new technologies such as embedded components and microvias (HDI); updated PCB specifications; a history of the industry; and an updated glossary of terms and definitions.



Surveys and Guides

www.circuitsassembly.com/bg_intro Visit our recently updated Online Buyers Guide, a comprehensive source of supplier information. You can search for specific products, supplier contact information or industry services. Be sure to register if your company is not already listed.

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- **2004 Salary Survey Questionnaire**
Don't miss your chance to be counted!
- **The Green Production Task**
Brian Sloth Bentzen, SMT in Focus
- **Process Defect Clinic and Book Reviews**
Bob Willis, EPS

Would you like to contribute to NET gain?

Contact Robin Norvell at rnorvell@upmediagroup.com

Flextronics Announces Settlement in Beckman Coulter Lawsuit

Flextronics International Ltd. (Singapore, www.flextronics.com) recently announced that a full settlement has been reached in the Beckman Coulter lawsuit. The settlement includes an agreement whereby Flextronics will pay \$23 million to Beckman to completely resolve the matter.

"Although the settlement remains larger than we believe the law would have allowed, it relieves the company of the significant burden and distraction that the original verdict imposed," stated Michael E. Marks, chief executive officer of Flextronics.

The settlement resulted in Flextronics recognizing an unusual charge of approximately 3 cents per diluted share in the December 2003 quarter for the amount of the settlement in excess of its previous accrual of approximately \$8 million for this matter.

Enthone North American Operations Awarded Single ISO 9001:2000 Certification

Enthone Inc., a Cookson Electronics Co. (West Haven, CT, www.cooksonelectronics.com), has been awarded a single ISO 9001:2000 Quality Management System (QMS) certificate for all seven of its North American operations. Specifically, facilities in West Haven, CT; Orange, CT; Londonderry, NH; Bridgeview, IL; Irvine, CA; Toronto, Ontario, Canada; and Mexico City, Mexico, have received the single certificate. BSI Management Inc. conducted the independent, third party certification and issued Certificate Number FM 70921. The single certificate replaces all earlier site-based ISO 9001:1994 or ISO 9002 certificates issued by various registrars.

ISO 9001:2000 certification connotes that Enthone is compliant to International Standards Organization (ISO) quality management systems and has demonstrated its ability to consistently provide products that aim to enhance customer satisfaction. ISO 9001:2000 is now the only standard in the ISO 9000 family against which third-party certification can be carried.

Enthone Inc. is a supplier of specialty chemicals and coatings used in the electronics and surface finishing industries.

FocalSpot Inc. Opens New San Diego Headquarters

FocalSpot Inc. (San Diego, CA, www.FocalSpot.com), a provider of inspection and rework/repair solutions and services to the original equipment manufacturer (OEM) and electronics manufacturing services (EMS) industries, has announced the opening of its new corporate headquarters in San Diego.

The company's product and service offerings benefit those OEM and contract manufacturers serving the military/aerospace, automotive, electronics, telecommunications, information technology and industrial automation market places.

The San Diego facility is the distribution hub for North American sales, which includes office and warehouse space, demonstration and training rooms and complete service facilities to support all principal product lines, including legacy Nicolet Imaging System (NIS) and SRT products.

The new headquarters is located in the Scripps Ranch technology community at 9915 Businesspark Ave., Ste. A, San Diego, CA 92131; (858) 536-5050; fax: (858) 536-5054; e-mail: sales@focalspot.com.

Samsung Rewards GSI Lumonics With Second Supplier Award

For the second year in a row, GSI Lumonics Inc. (Wilmington, MA, www.gsilumonics.com) has been recognized by Samsung Electronics as one of its top 20 equipment suppliers. This recognition took the form of an award presented to GSI Lumonics at Samsung's supplier appreciation day last October in Vallejo, CA.

GSI Lumonics supplies Samsung with its M430 WaferRepairT system, used by Samsung to improve yield during the production of dynamic random access memory (DRAM). In addition, Samsung uses other semiconductor and electronics manufacturing equipment from GSI Lumonics, including marking systems and circuit trimming systems.

GSI Lumonics supplies precision motion control components, lasers and laser-based manufacturing systems to the global medical, semiconductor, electronics and industrial markets.

In Brief

The **National Electronics Manufacturing Initiative** (NEMI, Herndon, VA) has added three new members. **Dell Inc.** (Round Rock, TX), **Endicott Interconnect Technologies** (Endicott, NY) and **Senju Comtek Corp.** (San Jose, CA) are the latest companies to join the industry-led consortium's efforts to strengthen the global electronics manufacturing supply chain.

Milford Manufacturing Services (Milford, MA) has opened its new product introduction (NPI) development and prototyping lab. The \$1 million lab provides round-the-clock access to equipment and facilities and links to The Looking Glass, a flexible, virtual manufacturing environment. In the lab, original equipment manufacturers (OEMs) can access equipment, as well as office and administrative support; engineering, purchasing, planning and operations; program management services; and periodic customer program reviews.

Northwest Analytical Inc. (NWA, Portland, OR) has moved its corporate headquarters to a new location in Portland. The headquarters is home to the company's development, marketing, sales, finance and administration departments. Now located in Portland's largest downtown office building, the U.S. Bancorp Tower, the new address is: 111 SW Fifth Ave., Ste 800, Portland, OR 97204; www.nwasoft.com.

Electrotek Corp. (Oak Creek, WI), a manufacturer of complex multilayer circuit boards, received ISO 9001:2000 registration in August 2003. Audit and certification was completed by QMI, a division of CSA Group.

Texatronics Inc. (Richardson, TX), a full-service contract manufacturer, announced the opening of its new express prototype facility. The new facility is approximately 10,000 sq. feet and is located at: 1666 Firman Drive, Ste 400, Richardson, TX 75081; (972) 367-2700; www.texatronics.com.

ITW Hosts Junior Achievement Facility Tour

The employees of ITW Chemtronics and ITW Alma (Kennesaw, GA, www.chemtronics.com) recently coordinated with Hayes Elementary School (Kennesaw, GA) to teach eight first-grade classes about the local economy, how it works and the roles they, their families and local businesses play in the community. The program was so enthusiastically received by the students, teachers and school administrators that, when offered a tour of the manufacturing facility, the entire first grade signed on.

In December 2003, three school buses with 141 first-graders, 16 teachers and teachers' aids and 16 chaperones arrived to tour the ITW Chemtronics/Alma facility. Divided into eight smaller groups, the visitors rotated through eight activity stations. After receiving an overview on ITW and plant safety, the children were treated to demonstrations on how aerosols and tacky mats are made and were given tours of shipping and receiving and research and development. Throughout the tour the facility was fully operational, adding to the kids' real world work experience.

At the end of the tour, the children were treated to refreshments and neon-colored Beanie Puppy souvenirs. Adult guests were presented with gifts of ITW products for their home use. ITW Chemtronics and ITW Alma's involvement with Junior Achievement was spearheaded by Rich Dodge, vice president of ITW Fluid Products.



Toshiba America Consumer Products' Plant Celebrates 25 Years

Toshiba America Consumer Products (TACP, Lebanon, TN, www.tacp.toshiba.com) recently celebrated the 25th anniversary of Toshiba Tennessee plant (TNP), its Lebanon, TN, manufacturing, distribution and service plant. In December 1977, Lebanon was selected by Toshiba America Inc. to expand its color television manufacturing operation in the U.S. In 1978, the initial facility was 148,000 sq. ft. and employed 112 people. TNP facilities today consist of almost 1,000,000 sq. ft. and employ more than 1,100 workers.

While many consumer electronics companies continue to move their operations overseas, TACP continues to focus a significant amount of its product assembly at TNP. The Lebanon plant has been actively involved in the development of many key Toshiba products throughout the years, one of them being Toshiba's line of high-end projection televisions.

Reaching beyond traditional manufacturing processes, TNP has implemented the Six Sigma methodology to improve its ability to react to the marketplace in a timely fashion. TNP has integrated its manufacturing, service and distribution centers, allowing TACP to serve its customers by reducing geographies.

Since 1978, executives at TNP have stressed the importance of communication between industry and community and have been involved in a number of community events and civic organizations. In addition to on-going programs like "Adopt-A-School," TNP also participates in annual golf tournaments supporting Prospect Inc., a vocational training facility for the physically challenged. Other charitable activities include ongoing participation in local Chamber of Commerce activities, company-sponsored American Red Cross blood drives and support of organizations like the United Way, Heart Fund, Cancer Fund, Lions Club, Rotary Club and Lebanon/Wilson County Library.

TNP is also an active supporter of the Toshiba America Foundation, which contributes to the quality of science and mathematics education in communities by investing in projects designed by teachers to improve science and mathematics education for students. Thanks to TNP, the majority of Wilson County schools have received and utilized grants from \$5,000 to \$20,000.

People

Speedline Technologies Inc. (Franklin, MA) has named **Dennis O'Neal** director of materials deposition products. He joined Speedline in 1995 as a product manager for semi-automatic printers. **Marc Apell** has been appointed director of thermal and cleaning products. Since joining Speedline in 1995, Apell has served as material planner, master scheduler, inside sales manager and reflow product manager.

Nordson/Asymtek China (Shanghai) has appointed **Wang Tian-bo** (David Wang, pictured at right) as regional sales manager and **Xueqiang**



(X.Q.) Gao (pictured at left) as applications and field services engineer. Wang brings more than



10 years of industry and management experience with Loctite in China and Singapore. Gao previously held positions with AMD China, K&S China and ESE.

Elcoteq Network Corp. (Irving, TX) announced that **Jouni Hartikainen**, president, Asia-Pacific, is now president and chief executive officer of Elcoteq Group. **Jukka Jäämaa**, current president of communications network equipment/industrial electronics, Europe, has assumed the post of executive vice president of the company. **Lasse Kurkilahti**, Elcoteq's current president and CEO, is handling special duties assigned by the Board of Directors through May 2004.

BP Microsystems (Houston, TX) has promoted **Lyman Brown** to the position of executive vice president and chief operating officer. He has managed engineering, marketing, business development and business strategy throughout his career with Texas Instruments, Siemens, Ford Motor Co. and Invensys.

Sanmina-SCI Corp. (San Jose, CA) has appointed **Peter J. Simone** to the Board of Directors. Simone currently serves as a director of Cymer Inc., Zoran Corp., Newport Corp. and several private companies. He is also an independent consultant to several private companies and the investment community.

Technical Devices Co. (Torrance, CA) has appointed **Ron Herbert** to the position of vice president of sales. Herbert first joined the company in 1996 and has over 40 years of experience in the electronics manufacturing industry.

Titan General Holdings Inc. (Fremont, CA) has appointed **Ken Shirley** as its chief executive officer. Prior to forming his own consulting company, Pyxis Partnership, Shirley held management positions with General Electric, Hadco Corp., Multi Circuits, Exide Electronics, AT&T/Lucent and Automata.

SMTA International 2004 Issues Call for Papers

Industry professionals are invited to submit a paper to the Surface Mount Technology Association's (SMTA, Minneapolis, MN, www.smta.org) forum for the manufacture of electronics products and related business practices, SMTA International (SMTAI). The event will be held at the Donald Stephens Convention Center in Chicago, IL, in conjunction with Assembly Tech Expo, on Sept. 26-30.

Papers are sought in the following technology tracks: Assembly; Business; Components; Emerging Technologies; Printed Circuit Board Technology; and Process Control. New topics for 2004 include Design for Success, Battery Interaction, Lean Manufacturing, Medical Electronics, Setup Reduction, Process Modeling and Supplier Engineering.

Abstracts of 300 words are due Feb. 27, and may be submitted on-line at www.smta.org/smtai/call_for_papers.cfm.

To reward exceptional achievement, \$1,000 and a recognition plaque will be given for the Best of Conference Presentation, Best of Proceedings Paper and the Best International Paper.

SMTA Plans Medical Electronics Symposium

The SMTA has announced plans for a Medical Electronics Symposium to be held May 19-20 at the Marriott Minneapolis Airport Hotel in Bloomington, MN. The conference chairman is Jeff Kennedy of Manufacturers Services Ltd.

The once-conservative medical electronics field is now pushing the state of the electronics industry and embracing emerging technologies. Areas of cross-fertilization are expected in new techniques that can be applied, but principles from mainstream surface-mount technology can also be adopted. Future advances in semiconductors, optoelectronics, microelectromechanical systems (MEMS) and nanotechnology will apply, as well as simple, low-cost disposable electronic products that are manufactured using automated assembly with uncommon materials.

Once viewed as an orphan, the resilient medical electronics field is a \$50 billion high-tech manufacturing industry that is still based primarily in the U.S.

The conference will explore medical electronic devices, components, packaging and assembly for major categories of medical electronics, including diagnostics, imaging, monitoring, life support, implants, personal monitor/delivery devices and disposable electronics. While each industry segment has different assembly needs and ranging volumes, the symposium will explore and compare the differences and similarities.

Sessions will cover the following potential topics: Components/Packaging; Assembly Technology Challenges; Manufacturing/Equipment Requirements; Regulations/Barriers to Entry for Medical Assembly; Techniques and Approaches; Process Requirements: Qualification, Traceability, and Control; Design Challenges: Power Management and DFX; and Environmental Constraints for Medical Products.

More event details can be found at www.smta.org/education/symposia/symposia.cfm.



UM Physicists Show Nanotubes are Best Semiconductors

University of Maryland (UM, College Park, MD, www.umd.edu) physicists have found that semiconducting carbon nanotubes have the highest mobility of any known material at room temperature. Mobility is a measure of how well a semiconductor conducts electricity.

A team of researchers led by Michael Fuhrer, assistant professor of physics at the UM's Center for Superconductivity Research, has fabricated a semiconducting nanotube transistor that shows a mobility almost 25% higher than any previous semiconducting material and more than 70 times higher than the mobility of the silicon used in today's computer chips. The results, published online in the journal *Nano Letters*, provide new evidence that semiconducting carbon nanotubes hold great promise for replacing conventional semiconductor materials in applications ranging from computer chips to biochemical sensors.

The International Technology Roadmap for Semiconductors says that a replacement material for silicon with higher mobility will be necessary by the year 2010. According to Fuhrer, his new findings indicate nanotubes could fill that role.

"Many challenges remain before nanotubes can be used instead of silicon in computer chips," said Fuhrer. "The contact resistance between nanotube and metal electrodes must be controlled. Nanotube batches must be prepared that contain only semiconducting nanotubes. And nanotubes must be placed with precision on substrates."

However, according to Fuhrer, significant progress is taking place in these areas and the challenges do not seem insurmountable.

IMAPS Inaugurates 2004 Executive Council

Phillip J. Zulueta recently took office as the 2004 president of IMAPS North America (www.imaps.org). For the past year, Zulueta has served as president-elect and chair of the Member Benefits Task Force that is responsible for the new IMAPS member benefits. Zulueta became an IMAPS member in 1979 and has held positions both locally and nationally for the society. He recently served two terms as Southern California Regional Director.

Zulueta's strategic plan for the years 2004-2006 can be seen in its entirety at www.imaps.org/memberben.htm.

Other IMAPS North America 2004 Executive Council members include: Bruce Romenesko, president-elect (2005 president); Peter Barnwell, first past-president (2003 president); R. Wayne Johnson, vice-president of technology; Ken Gilleo, vice president of membership; Ed Gildein, treasurer; Larry Rexing, secretary; Susan Trulli, Northeast regional director; Ajay Malshe, Southeast regional director; Gino Domenella, North Central regional director; David Virissimo, Southwest regional director; and Anwar Mohammed, Northwest regional director.

300 mm Wafer Fabs Dominate New Semiconductor Manufacturing Facilities

A new market report dedicated to 300 mm (12 in.) wafer manufacturing facilities lists 25 such wafer fabs currently on line with a combined capacity of almost 400,000 wafers per month when ramped to full production.

The 300 mm Fab Report from Strategic Marketing Associates (SMA, Santa Cruz, CA, www.scfab.com) lists UMC, a foundry based in Taiwan, as having more potential 300 mm capacity when fully ramped than any other company. UMC is followed by Intel, Samsung, Powerchip and Texas Instruments. Taiwan is the leading country in 300 mm capacity, followed by the U.S. The two countries together currently own 55% of 300 mm capacity already online. Most of the current 300 mm lines are devoted to dynamic random access memory (DRAM) production, followed by foundries.

Taiwanese fabs also account for 40% of 300 mm fabs that are currently under construction or in the process of equipping, as well as those in the planning stage. Foundries account for 37% of those fabs currently under construction or equipping, and DRAM fabs account for an additional 37%. The total value of fabs currently being built or equipped is more than \$27 billion.

SEC/N Elects Board of Directors

The Surplus Equipment Consortium/Network Inc. (SEC/N, Scottsdale, AZ, www.secninc.com), the international trade association for the used equipment and related services segment of the semiconductor and electronics manufacturing industry, elected a president and board of directors at its annual summit meeting in San Jose, CA. The election of the Board is the first requisite to SEC/N's plan to transform the organization into a non-profit, membership led and managed trade association.

Members of the newly elected board are: Gary Robertson, Applied Materials, president; Bill Scaife, Group Five, vice president; Tim Hayden, Rite Track, vice president/nominating committee; Mike Mardesich, GE Global Electronics Solutions (GES), secretary; Richard Ringler, Broadway Engineering, treasurer/finance committee; Tom Moon, Fab Logistics, chairman, membership committee; and Doug Eidle, Cookson Electronics Equipment, chairman, programs committee.

Gary Alexander, founder and former president, will remain active with the organization in the role of executive director.

China's Electronics Manufacturing Swells

According to a report released by Electronic Trend Publications (San Jose, CA, www.electronic-trendpubs.com), China has emerged as the world's leading manufacturer.

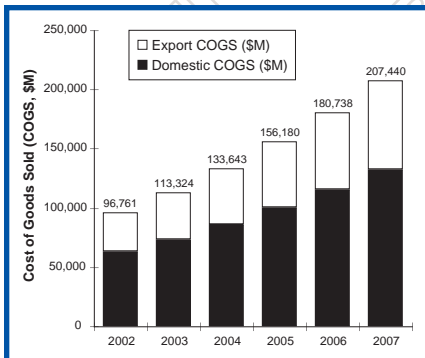
China's gross domestic product (GDP) is approaching \$1.5 trillion annually—about one-third the size of the Japanese economy and 15% the size of the U.S. economy. Furthermore, China's leadership has identified electronics and information technology as one of the foundations of this growth.

Foreign direct investment (FDI) by original equipment manufacturers (OEMs) has played a leading role in China's emergence as an economic power and major electronics factory site. In 2002, FDI in China was larger than in any other country, including the U.S.

Another factor are the numerous joint ventures initiated by leading multinational companies, resulting in rapid, widespread technology transfer. China's emergence as a cost-effective manufacturer is also due to China's low labor cost, entry into the World Trade Organization and adoption of world-class manufacturing quality standards. These factors have made China the preferred location for OEMs abroad looking to make products for export as well as to penetrate domestic Chinese markets.

According to the report, China's IT market will continue to lead the electronics industry in growth and total size. China will account for almost 70% of the total electronics market by 2007.

The market for products manufactured in China is expected to expand at a 16.5% rate from 2002 to 2007. The highest growth rates will be experienced in segments that hold substantial export potential, such as computers and peripherals.



Electronic Products Manufactured in China, Domestic and Export.

Outsourcing Forecast: "Strong Resurgence"

"We definitely see a strong resurgence in the industry." Those words were uttered by senior project manager Matt Chanoff at the latest Technology Forecasters Inc. (TFI, Alameda, CA, www.techforecasters.com) *Quarterly Forum for Electronics Manufacturing Outsourcing and Supply Chain* held at the Cisco facilities in San Jose, CA.

Chanoff commented that the year 2003 marked the official *turning the corner* that we in the electronics manufacturing business have been anticipating these past few years. TFI's research indicated that the total available market (TAM) for electronics manufacturing outsourcing increased nearly 5% in 2003 from 2002's negative growth. And total electronics manufacturing services (EMS) revenue moved right along with the TAM—from 2002's almost 10% drop to a respectable 8% growth in 2003.

Worldwide gross domestic product (GDP) had a slight uptick as well—from 2002's 2.8% to 3.3% in 2003. According to TFI, some of the strongest growth came from both China—the world's primary manufacturing region—and the U.S.—still the world's primary electronics market.

Chanoff also noted particular strength in the U.S. equipment sector; an upward trend in Japan's electronics and export sectors; and the lessening impact of the dot.compost and telecom bubbles that helped ignite this nastiness in the first place.

But, as Chanoff pointed out, even though the landscape is shifting toward the positive, the environment is still pretty gnarly. We're not in Kansas anymore. We're in Shenzhen. And we've got long-term impacts of that fact to consider—like the process of China becoming an actual market for goods. We've also got quite a few short-term impacts to deal with as well—such as cultural differences, China meeting World Trade Organization (WTO) requirements and the competition between the original design manufacturer (ODM) and the EMS provider.

Seems that everyone in recent years has underestimated the impact of the ODM to the EMS business. According to TFI, Chinese ODMs have the edge over U.S. EMS companies. TFI's research indicates that many OEMs are focusing on product range and, therefore, picking up ODM designs. So, despite TFI's positive forecast of a compound annual growth rate (CAGR) of 11.6% for EMS from 2002-2007, ODM CAGR is almost twice that at 21.9%. Although on much steadier ground than in recent years, the EMS business is still contending with a gnarly environment, indeed.

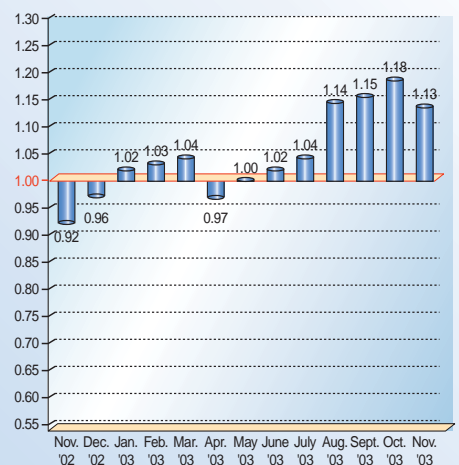
—Lisa Hamburg Bastin, Editor-in-Chief

November 2003 Book-to-Bill

The North American IMS/PCB Industry Book-to-Bill Ratio for November 2003 was 1.13. The ratio is calculated by averaging the index numbers for orders booked over the past three months and dividing by the average index numbers for sales billed during the same period. A ratio of more than 1.00 suggests that current demand is ahead of supply, which indicates probable near-term growth.

Industry sales billed (shipments) in November 2003 increased 6.0% from November 2002, and orders booked increased 19.7% from November 2002.

Compared to 2002, shipments of PCBs are down 18.5% year-to-date, while bookings of PCBs are down 7.6% year-to-date.



Neptune Technologies, Galileo Purchase ViTechnology's Assets

The Neptune Technologies Group (Lyon, France), associated with the investment fund Galileo (Paris, France, www.galileo.fr), has acquired all of the electronics activities of the Thermatech Group and, in particular, those of its subsidiary ViTechnology (Sophia Antipolis, France, www.vitechnology.com).

ViTechnology is a global manufacturer of equipment dedicated to the electronics industry from back-end semiconductor packaging through board assembly and final test. The company offers the automated optical inspection (AOI) market its technology known as Vectoral Imaging, and it has also developed a method for reflowing board assemblies using phase convection technology. Over the years, ViTechnology has increased its capability to service and support its international and corporate customer base, due to its subsidiaries and customer support centers in the U.S., South America, Europe, South East Asia and China.

Neptune Technologies is an industrial holding that has specialized in advanced technology for international niche markets. Galileo is an investment firm that manages funds brought together from international institutional investors. Over the last 15 years, Galileo has been investing in companies operating in the areas of computers, telecommunications, electronics and semiconductors.

Elcoteq, Marconi Sign Manufacturing Agreement

Elcoteq Network Corp. (Irving, TX, www.elcoteq.com), a provider of electronics manufacturing services (EMS) for the communications technology industry, and Marconi Corp. plc (London, UK) have announced that Elcoteq will become Marconi's preferred partner for the manufacture of fixed wireless access products and associated technologies.

Elcoteq will offer Marconi new product introduction (NPI), manufacturing, pre-field installation and repair services primarily for its microwave communications systems business. Cooperation also includes transfer of Marconi's electronics manufacturing in Offenburg, Germany, to Elcoteq, along with its 340 employees. The unit will continue to produce digital microwave communications systems for Marconi's telecommunications networks solutions. The total consideration paid

by Elcoteq will amount to approximately \$11.8 million. Elcoteq took over the Offenburg unit in November 2003.

Elcoteq will further develop the Offenburg unit as an NPI center for its Communications Network Equipment (CNE) business serving Marconi and other customers. The unit will work closely with other Elcoteq manufacturing units in Europe and elsewhere. The company already has a plant in Überlingen in southern Germany.

Marconi is a telecommunications equipment, services and solutions company. The company's core business is the provision of optical networks, broadband routing and switching and broadband access technologies and services.

European Companies Maintain Strong Position in Packaging, Equipment for MEMS

A new industry review by enablingMNT (Berlin, Germany, www.enablingMNT.com) highlights the large regional differences in the business approach of suppliers and service providers for the microsystems market.

The report, "MST/MEMS Equipment Manufacturers," shows a strong position for German companies involved in this market, while most of their U.S. counterparts are based in California. Another remarkable trend shows small equipment companies leading the move into the microstructures technology (MST)/microelectromechanical systems (MEMS) specialized equipment market, while large, traditional semiconductor equipment companies continue to be hesitant.

In the area of packaging, Europe has a large number of suppliers, while the U.S. seems to handle larger volumes. Finally, several integrated circuit (IC) packaging companies, especially from the Far East, adapted their standard high-volume processes to the demands for the MST/MEMS industry, paving the way for affordable, high-volume production. The report estimates the market size for MST/MEMS equipment at approximately \$0.73 billion, of which \$0.27 billion is for front-end equipment.

Cimnet, FUBA Sign Agreement

FUBA Printed Circuits GmbH (FUBA, Munich, Germany), a European printed circuit board manufacturer, and Cimnet Systems Consulting, a subsidiary of Cimnet Systems Inc. (Downers Grove, IL, www.cim-sys.com), have agreed on a

multi-year, multi-million Euro engagement to enhance FUBA's information technology capability and install advanced software solutions from Cimnet.

Under the agreement, Cimnet will provide a total enterprise solution, including a Web-based quotation system, a pre-production engineering system and a specialized enterprise resource planning (ERP) system for the PCB industry.

Jules Limpens, managing director of Cimnet's European operation, is looking forward to intensifying the partnership and serving one of the largest PCB companies in Europe. The Cimnet service team has many years of experience in information technology, PCB manufacturing, supply chain management and quality management. The service team will work closely with the development teams at Cimnet Systems' USA and India offices.

Fabrinet Opens German Office

Fabrinet (Bangkok, Thailand, www.fabrinet.com), an engineering and manufacturing services company, has announced the opening of its first European office in Mommenheim, Germany. The office will provide sales, engineering and customer service in support of Fabrinet's expanding European customer base.

The office will be managed by Roland Beckhaus, Manfred Benecken and Siriwan Kaewchansilp. Beckhaus and Benecken each spent over 25 years at IBM in various management positions. Benecken most recently held executive positions at Excabyte Corp., a provider of data storage solutions, while Beckhaus launched a freight and logistics support company. Kaewchansilp, the director of European business development with Fabrinet, has held various business development and client support positions in the mass storage and telecommunications industries throughout Europe.

Mommenheim was chosen because of its central location in Germany and its proximity to both Eastern and Western European technology centers. The office is located at Im Rosengarten 13, D-55278, Mommenheim, Germany.

Would you like to contribute to **Europe WATCH**?
Contact Robin Norvell at
rnorvell@upmediagroup.com.

Q&A with Michael R. Cannon, President and CEO, Solectron

Circuits Assembly: What's the number one challenge facing Solectron these days?

Michael Cannon: The past three years have forced all of us in the industry to recognize that the electronics manufacturing services (EMS) model must evolve to better meet the future needs of our customers. We need to focus on delivering more integrated supply chain solutions by working collaboratively with our customers to optimize their unique supply chains. To maximize the value we [Solectron] bring, we are pursuing a path of collaborative design services, Six Sigma Lean manufacturing and fulfillment, and integrated after-market services, all of which are linked to optimize total supply chain performance for our customers.

CA: Explain Solectron's Six Sigma Lean Initiative.

MC: It is imperative for EMS companies to have the flexibility to not only deliver the right product at the right cost at the right time—but also avoid making the wrong products or accumulating the wrong inventory, as market demand changes unexpectedly. We believe the best operational model to achieve this objective is to implement Six Sigma Lean practices throughout the company.

Lean thinking fundamentally changes the premise that cost, quality and flexibility require tradeoffs. It has demonstrably proven that we can simultaneously continue to reduce unit costs, increase flexibility to meet rapidly changing demand and improve quality to better meet our customers' needs at a much lower total cost of ownership. Lean puts in place tools and processes to drive continuous improvement, with the ultimate objective of eliminating all sources of waste and responding to specific demand signals. Six Sigma complements Lean with additional methods and tools that support the relentless pursuit of quality.

While many companies talk about Six Sigma and Lean, few actually implement them throughout their organizations. They may use a few tools and streamline a few activities, but they rarely use these tools to completely transform the way they create value. At Solectron, we are aggressively implementing a worldwide Six Sigma Lean plan, and early results are already visible.

Establishing Six Sigma Lean within our factories is just the beginning. The real value comes when we extend this methodology along the entire supply chain. We are already beginning to collaborate with our customers and suppliers to drive this transformation. By working together to eliminate waste across the entire supply chain—ensuring that every activity by every participant adds value for the end customer—we can achieve new levels of performance and flexibility.

CA: There's been so much press for original design manufacturers (ODMs). And certain EMS companies have responded to the ODM threat by calling themselves "Contract Design Manufacturers" or "Collaborative Design Manufacturers," in Solectron's case. Give us a quick list of pros and cons for both the ODM and CDM models.



MC: We believe that there are many paths to successful participation in the EMS industry and that every company does not need to follow the same strategy. We also believe that collaborating with customers on product design to help them get world-class products to market on time and within target cost constraints is critical to their success and to our success.

ODMs often work independently of their customers, pursuing speculative product design so that the ODM owns the intellectual property (IP). They sell their products not only to the original equipment manufacturer (OEM), but also into the OEM's channel and, in many cases, into the ODM's own channels. For standardized and low-IP products, this model is usually acceptable to OEMs. At Solectron, we are focusing on providing collaborative design services for customers for their mid-range and high-end product categories, where the customer places a high priority on protecting their IP. We will provide a variety of design services, including complete product design, in a manner that protects the customer's IP.

CA: You will present at the opening session of IPC EXPO/APEX February 24. What's the one message you hope attendees will take from your keynote: "Drawing Insights from the EMS Industry Evolution"?

MC: That we need to change how we do business together. EMS providers, suppliers and OEMs must partner together across the entire supply chain to improve performance and maximize their collective value. By collaborating with our customers and suppliers in both design and the implementation of Six Sigma Lean, we will greatly improve quality and flexibility, while continuing to drive down costs. We believe this approach will make our customers more competitive, thereby increasing their success in capturing more share in their respective markets.

CA: What makes you excited about the future of Solectron and the EMS industry?

MC: There are several reasons I am excited about the future of Solectron and our industry. First, the EMS industry, although substantial in size, is far from mature and continues to hold attractive, long-term growth potential. We are seeing existing customers increasingly outsource larger portions of the supply chain, and other industries are starting to follow suit, including the automotive, industrial and medical markets.

Second, Solectron is well positioned for long-term growth: We have a strong customer base and reputation in the industry; we have a terrific workforce; we have the right scale and footprint to support our customers in any geography and we have world-class capabilities in design, manufacturing and supply chain management.

Third, we will leverage our strengths to reestablish Solectron as the best-in-class EMS partner. As we make additional investments in collaborative design, and as we implement Six Sigma Lean, customers are excited about the competitive benefits of working with Solectron as their trusted, long-term supply chain partner.

—Lisa Hamburg Bastin, Editor-in-Chief