

newsletter

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Qspin, new member of DSP Valley

QSpin, a consulting group based in Louvain-La-Neuve and Gent, delivers both services and advice in two specialized domains: the development of technical software & system and the improvement of mission critical processes. Created in 2005 by a core team of previous N-Tech Belgium and (Atos) Origin consultants, QSpin nowadays relies on the experience of more than 30 consultants to help its customers tackle both technological and organizational problems.



Based on an initial experience in the telecoms sector, our Product Development team has build expertise across a range of industries, applications and technologies that we make available to our customers through a proven set of services:

continuation on page 3

Jabil develops a multi-media platform for consumer products



Jabil brings electronics products faster and cost effective to the market by providing extensive support to the customer during the development, in the procurement of components and in the manufacturing of these products. More and more customers request a pro-active attitude in the development of new products, in order to reduce the time to market.

To support the shorter lead times, Jabil has developed a generic Consumer Electronics Platform (CEPAP) that allows faster introduction of products like IP based set-top boxes (STB), Hybrid IP-STB, Digital Media Players or Adaptors, and Digital Media Server products. The CEPAP products were demonstrated on major shows like e.g. IFA2009 and CES2010 and resulted in several project wins for different customers.

Context

The figure below depicts the general context of the CEPAP platform, with 2 possible configurations for the CEPAP product, one is used as a client and the other one is used as a server.

A typical execution of a client product is a digital media adaptor that is capable of receiving Audio/Video (AV) data from different sources, like a server on the home network, the internet or an external USB

data storage device. The media adaptor decodes the AV data and sends it via a HDMI or any other standard interface to a TV. The media adaptor is capable to decode the most common audio-video formats up till full HD (1080p) and supports web browsing and different popular internet applications like YouTube and flickr.

The CEPAP server supports the standard features of a set-top box product like digital TV reception and personal video recording (PVR). Digital TV reception is done via standard interfaces like terrestrial (DVB-T and DVB-T2), satellite (DVB-S and DVB-S2) and cable (DVB-C). The server will stream the A/V data from the hard disc over a home network to the clients.

Special attention is given to new trends and technologies like graphical user interfaces, home networking and green requirements.

User Interface

The next generation of consumer products will most probably use a 3D graphical user interface and also a more enhanced remote control, like e.g. sensing remote controls as used in a Wii game console. Different remote controls are supported by the CEPAP platform, ranging from a standard remote control to a motion sensing remote control, which allows the user to control items on the display via gestures.

To offer enhanced GUI (Graphical User Interface) support, the CEPAP has integrated the OpenGL (Open Graphics Library) Application Programming Interface (API), which support 2D and 3D graphics.

Green requirements

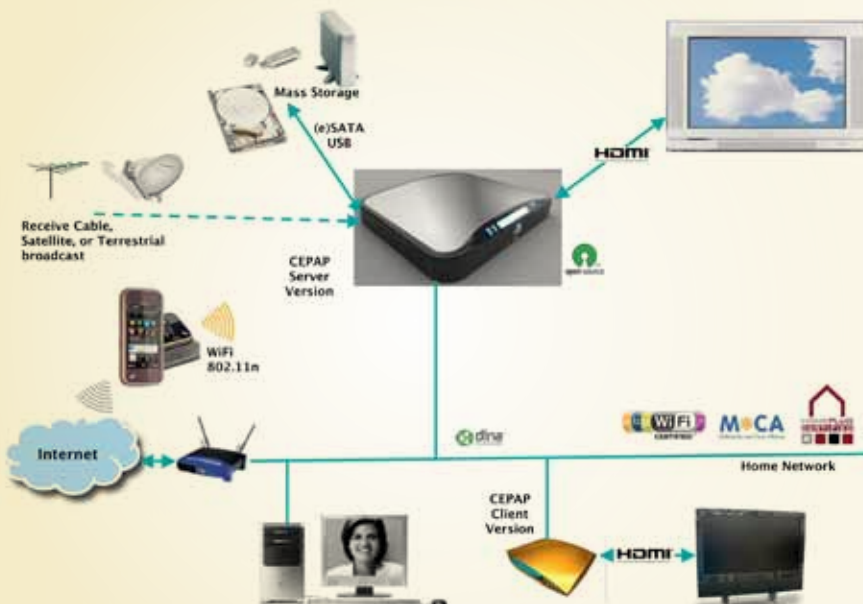
Power consumption of consumer devices is becoming more and more important; therefore, energy saving features are used by the CEPAP platform to reduce the standby power consumption below the legal requirements (e.g. new set-top box products should consume less than 1 W in standby mode).

Home networking

A home network allows you to use audio/video content on different products in your home. Setting up a home network that supports smoothless AV data-sharing between different products can be complex due to bandwidth requirements, quality of service and interoperability between the different products.

One of the first choices you have to make when setting up a home network is the use of the medium; the most common solutions are:

- A wireless network: this is a convenient solution and supports mobile devices. The main disadvantage is the availability of the network in the home due to walls or other installations.



- An Ethernet network: this is a cheap medium, but can require new wiring in your home as Ethernet cables are often not available.
- Use of existing wires like cable, telephone or power lines. Europe prefers in general power line communication, while in the US cable communication is more common (typically in the US there are more cable outlets in the house).

The CEPAP platform offers a customer a variety of home network interfaces like Ethernet, wireless IEEE802.11n, MOCA (multimedia over cable) and HomePlug AV (Powerline).

DLNA (Digital Living Network Alliance) functionality is implemented in the CEPAP platform to ensure the interoperability between the different products connected to the home network. As an example, you can use your mobile phone in the home network as:

- A server: the CEPAP will act than as a

About Jabil

Jabil Circuit, Inc. is an electronics solutions company providing electronic manufacturing services and solutions in the Americas, Europe, and Asia.

Jabil offers design (electronics, mechanical and software), production, product management, and after-market services to companies in the aerospace, automotive, computing, consumer, defense, industrial, instrumentation, medical, networking, peripherals, storage, and telecommunications industries.

About Jabil Hasselt

Jabil Hasselt delivers product design, PCB design, product validation, test solutions and fast prototyping for electronic products. We provide a one-stop-shop solution to diverse industries such as consumer, industrial and medical. With more than 30 years of experience and in-depth knowledge in product development, validation and testing, Jabil's Hasselt team provides best-in-class services for even the most complex projects, with a strong focus on lowest cost, highest quality and fast market introduction.

client. The AV content from Internet is played on the CEPAP while the mobile is acting as modem.

- A client: the AV content on the mass storage from the CEPAP will be trans-

ferred and displayed on the mobile.

- A remote control: the mobile controls e.g. the client.

Other DLNA compliant products like e.g. PCs, TVs can be used as well. ■

continuation from page 1

QSpin, new member of DSP Valley

- Specific expertise to reinforce a client's development team (secondment)
- Managed Projects (fixed-price or "time and materials" approach)

Our process improvement experts help with setting up and implementing improvement strategies and assessments (CMMi / ISO 9000 / ISO 15504 (SPICE) / ITIL / ...) for organizations active in research & development, services or production.

We guide our clients through every step of the development life cycle in order to reach the ultimate goal of a balanced and coherent match between the reality of their business objectives and its advanced technological needs. From analysis through architecture and design with the emphasis upon code

development, testing, quality assurance, integration and project management, our services cover all steps necessary for the successful delivery of innovative products.

Being a technological service organization we strongly believe that networking is the best way to establish new relationships with companies that can be either customers, suppliers or partners. Business ideas tend to arise more easily within an active network that brings together people and businesses with a similar – yet diverse – interest. Today QSpin is a partner of Embinet - the Embedded Software Partner Network - an alliance of software & systems service providers who are all active in the specific sub-field of technical or embedded software.



In order to meet new people with a similar technological interest we are sure that joining DSP-Valley is the logical next step in the growth of QSpin. To the existing members we offer our technological expertise, combined with our process improvement experience, and our knowledge of the Walloon market and its active policy in supporting innovation. ■

Portable, easy-to-wear mind speller Typing words with your brain

At the Medtech Conference in Stuttgart, Germany imec, Holst Centre and the lab of neuro- and psychophysiology at the Katholieke Universiteit Leuven presented the Mind Speller, a portable, easy-to-wear, intelligent textual and verbal communications prototype device enabling people with motoric disabilities (suffering from for example brain paralysis or speech or language disorders) to communicate.



Portable, easy-to-wear mindspeller

The Mind Speller is an EEG(electroencephalogram)-based device that interprets brain waves to spell words and phrases. It detects and interprets P300 event-related potentials in the EEG-signals of a person that is selecting characters from a display presenting alternate rows and columns of characters. P300 potentials are often used as metrics of cognitive function in decision making processes. However, currently available P300 devices are large, expensive and uncomfortable in use. The Mind Speller, on the other

hand, uses a portable device, not larger than a matchbox, connected to a cap that contains electrodes located at specific positions on the head to capture the relevant EEG-signals. The electronics in the matchbox are developed by imec and Holst Centre. It contains imec and Holst Centre's proprietary ultra-low power 8-channel EEG-chip to process the EEG signals, a commercially available low power microcontroller that digitizes the EEG signals and a low power 2.4GHz radio that transmits the EEG signals wire-



lessly to a nearby PC. The data is interpreted on the PC by powerful and robust signal processing algorithms developed by the team of Prof. Marc Van Hulle at the lab of neuro- and psychophysiology of the Katholieke Universiteit Leuven.

Currently, accurate solutions are available on the market to help people to communicate despite severe impairments. These solutions rely on either eye-tracking technology or laser pointing. However, they are subject to long and vulnerable calibration procedures and they are very expensive due to the technology used and the need for tailor-made solutions.

"The Mind Speller is a generic device that can easily be adjusted to different users. Therefore, it could become a cost-efficient communication solution for people with temporal impairments for whom the existing solutions are too expensive. Moreover, the Mind Speller may help those patients that are not helped with the existing devices driven by motoric activity, as the Mind Speller is based on a different principle, using P300 EEG potentials to read people's 'thoughts'", says Prof. Marc Van Hulle from the lab of neuro- and psychophysiology at the Katholieke Universiteit.

"With a much simpler design, relying on a power-efficient on-chip implementation, the Mind Speller is the first step in the development of a generic, easy-to-wear, accurate and cost-efficient communication solution for people with motoric disabilities;" says Chris Van Hoof, Program Director Human++ at imec *"Currently, we are adapting the electronics to work with dry electrodes making the system even more unobtrusive."*

About Holst Centre

Holst Centre is an independent open-innovation R&D center that develops generic technologies for Wireless Autonomous Transducer Solutions and for Systems-in-Foil. A key feature of Holst Centre is its partnership model with industry and academia around shared roadmaps and programs. It is this kind of cross-fertilization that enables Holst Centre to tune its scientific strategy to industrial needs. Holst Centre was set up in 2005 by imec (Flanders, Belgium) and TNO (The Netherlands) with support from the Dutch Ministry of Economic Affairs and the Government of Flanders. It is named after Gilles Holst, a Dutch pioneer in Research and Development and first director of Philips Research.

Located on High Tech Campus Eindhoven, Holst Centre benefits from the state-of-the-art on-site facilities. Holst Centre has over 150 employees from around 25 nationalities and a commitment from over 20 industrial partners.

About imec

Imec performs world-leading research in nano-electronics. Imec leverages its scientific knowledge with the innovative power of its global partnerships in ICT, healthcare and energy. Imec delivers industry-relevant technology solutions. In a unique high-tech environment, its international top talent is committed to providing the building blocks for a better life in a sustainable society.

Imec is headquartered in Leuven, Belgium, and has offices in Belgium, the Netherlands, Taiwan, US, China and Japan. Its staff of more than 1,750 people includes over 650 industrial residents and guest researchers. In 2008, imec's revenue (P&L) was 270 million euro.

Imec is a registered trademark for the activities of IMEC International (a legal entity set up under Belgian law as a "stichting van openbaar nut"), imec Belgium (IMEC vzw supported by the Flemish Government), imec the Netherlands (Stichting IMEC Nederland, part of Holst Centre which is supported by the Dutch Government) and imec Taiwan (IMEC Taiwan Co.).

About K.U.Leuven

The K.U.Leuven (Katholieke Universiteit Leuven) was founded in 1425. Currently, the K.U.Leuven has an annual research budget of about 300 million Euro, over 3000 Ph D students (of which more than 25% international), over 470 doctoral degrees per year (of which more than 25% international), over 5100 researchers (measured in full-time equivalent), over 3600 publications in international peer-reviewed academic and scientific journals per year. The K.U.Leuven is ranked the 4th university in FP6 and the 6th in the Leiden ranking on publication output.

The university has a long-standing tradition in top-level research in life sciences, engineering, exact sciences and humanities. By the creation of multidisciplinary centers of excellence and by supporting strong links with UZ Leuven, one of the largest European university hospitals, it actively supports cross-border innovations. Via its technology transfer office K.U.Leuven Research & Development, the transfer of knowledge and technology between the university and the industry is promoted and supported. It provides an integrated approach to technology transfer covering contract & collaborative research, patenting & licensing and spin-off creation.

Wireless Nodes are talking Gossip (2)

CHESS has developed several physical wireless sensor nodes, with different form factors and different applications in mind. All applications exhibit the necessity to deal with large scale and long duration deployment, dynamically changing network topology (either due to ambient RF disturbances, or nodes changing their physical position) requiring self-configuration. Some examples are shown in the figures below.

The state-of-the-art currently available, the MyriaNed node version 3, can operate unattended on normal AAA batteries for two years or longer, using a communication heartbeat of 1 second, whereby both the radio as well as the CPU is only active for a few milliseconds per round. We have performed some experiments with off-the-shelf solar cell technology and power capacitors (as an environmental friendly replacement for a battery) whereby sufficient electrical power is available to operate the wireless sensor

node continuously at normal lighting levels available in an office environment using relatively small sized solar cells. MyriaNed nodes also have the ability to control actuators, for example to provide feedback to users through a simple LED indicator or a small and low-power LCD display. But more complex control tasks, i.e. remotely switching other devices on or off, are certainly feasible.

Integration of sensors is one of the most important and challenging tasks for wireless sensor node development. The microcontroller used on the MyriaNed node has a significant number of electrical interfaces that can be used to connect a large variety of sensors, amongst others GPIO, I2C, SPI and a multi-channel ADC converter. These interfaces are usually sufficient for connecting of the shelf and commercially available sensors. In one of our other WSN designs, we have already integrated a low-power 3-D accelerometer device based on MEM



technology in order to detect movement and orientation of the node. In the PLEISTER research project, we collaborate with academia (funded under the Dutch STW SmartSIP program) to develop new packaging technology to decrease the physical footprint of the wireless node, consisting of the antenna, radio, battery and CPU. The aim is to create a device which measures roughly 1 cm² which can be attached to an object as if it was a piece of band aid or sticky tape (note: "pleister" is the Dutch word for band-aid). Similarly, in the NANOWIRELESS project, funded under the same STW-SmartSIP program, we are aiming to integrate highly sensitive analog amplifier circuits to interface our wireless node technology to so-called nanowires, which can be employed to accurately measure gaseous substances at extremely low power levels. In the next article in a next newsletter, more about use cases. ■

SiTel and Target partnership yields powerful VoIP DSP

Target's IP Designer tool suite enables development and programming of audio-specific high-performance, ultra-low-power DSP for SiTel's award-winning Green VoIP processors



About Green VoIP

Concerns over climate change and fossil fuel supplies have put energy efficiency of all products at the forefront of both consumer and government agendas. For example, the European Commission Regulation on ecodesign (implementing Directive 2005/32/EC) proposes limiting the standby power consumption of domestic and office devices initially to 2 W if the device has a display and 1 W otherwise. A future second phase will further tighten these limits to 1 W and 0.5 W. Similar legislation is currently making its way through Congress in the US.

To help customers respond to these concerns and regulations, SiTel launched the Green VoIP range in 2008. These energy-efficient ICs allow manufacturers to create VoIP solutions that are environmentally friendly and reduce electricity bills. The first Green VoIP product, the SC14450, reduced the net system power consumption for typical applications by 50% to around 800 mW during calls and 550 mW in idle mode. The next Green VoIP processor, the SC14452, pushed down power consumption even further to 550 and 350 mW respectively – meeting the most stringent proposed limits.

SiTel Semiconductor announced how its successful collaboration with Target Compiler Technologies led to the creation of customized audio DSPs for its SC14452 Green VoIP processor. The DSPs combine extreme energy efficiency with high processing performance, enabling industry-leading audio quality and power consumption. Key components of the SC14452 that won a 2009 Frost and Sullivan Green Excellence Award, the DSPs were developed using Target's IP Designer retargetable tool suite.

Target's tools allowed SiTel to develop application-specific Gen2DSPs including a C-compiler, which means customers can program the DSPs themselves. The DSPs

operate at low frequency to minimize energy consumption, yet provide high processing power. The SC14552 features two of these DSPs, which together deliver 160 MIPS. At the same time, they help minimize power consumption, enabling in-call power figures below 600 mW.

With these powerful DSPs on-board, the SC14452 delivers outstanding sound quality for crystal clear communications. It can support four concurrent IP connections, independent of the codec chosen. Currently supported codecs include G.711, G.729, G.722, G.726, iLBC and MP3. Highly integrated, this VoIP solution reduces the overall system bill of materials (BoM) for enterprise VoIP desktop

About Target Compiler Technologies

Target Compiler Technologies is the leading provider of retargetable software tools to automate the design, programming and verification of application-specific processor cores (ASIPs). Target's IP Designer tool suite has been applied by customers worldwide for diverse application domains, including DECT, GSM, WCDMA, HSDPA and LTE handsets, VoIP, audio coding, car infotainment, ADSL and VDSL modems, wireless LAN, hearing instruments, mobile image processing, video processing, and automotive control applications. Target is a spin-off of imec, is headquartered in Leuven, Belgium, with North American operations in Boulder, Colorado.

phones and IP-DECT base stations. It features integrated DECT, CAT-iq, DECT 6.0 and KDECT support and a dedicated cryptography engine for complete call confidentiality.

About SiTel Semiconductor BV

SiTel Semiconductor BV was established in June 2005, following a management buy-out from National Semiconductor Corporation. Headquartered in 's-Hertogenbosch, The Netherlands. SiTel is a fabless IC manufacturer with design centers in The Netherlands and Greece along with regional sales offices in Hong Kong, Japan and the U.S. The company specializes in the design, manufacturing and marketing of high-performance CMOS solutions for digital cordless and corded communication and is the world's number one DCT supplier for cordless voice, real-time data and VoIP.

"SiTel strives to create state-of-the-art chipsets for the cordless telephony and VoIP markets that deliver outstanding audio quality and performance while minimizing environmental impact," said Mark De Clercq, Product Marketing

Manager at SiTel. *"The Target tools have helped SiTel achieve this goal by enabling us to develop audio-specific DSPs that deliver lots of processing power while operating at low frequency."*

"As a leading supplier of chipsets for

cordless communications, SiTel's decision to use our IP Designer tool suite highlights the power and flexibility our tools offer. We are extremely pleased to have played a key role in the creation of a DSP that will enable more advanced and environmentally friendly communications products," said Gert Goossens, CEO of Target.

SiTel's drive towards more advanced and flexible System-on-Chip (SoC) solutions is the reason behind the company's choice of Target's tools. Target's IP Designer is the leading retargetable tool suite for the design, programming and verification of application-specific instruction-set processors (ASIPs). ■

Why hardware designers should switch to Eclipse



Tool chain mess

Integrated Development Environments (IDEs) have long been the primary tool for software engineers. Like an airplane cockpit, an IDE is the control center from which the engineer accesses all of the data and tools that he needs. IDEs, and especially Eclipse, have proven to be extensible, open, high quality platforms. Like an airplane pilot, any electronics engineer or software engineer needs all the technological support he can get. Unlike a pilot, the typical hardware designer does not have all of the controls he needs at the tips of his fingers. Information is scattered across different files: documentation, high-level models, RTL models, build scripts, simulation results, wave traces, synthesis log output, etc. Inspecting all of these different

files requires different programs, many of which barely interact.

IDE is the cockpit for developers

For decades, the generally accepted cockpit for software development has been the IDE. One such IDE is the Eclipse platform. Eclipse is used for general purpose software and embedded software development. Both major FPGA vendors, Xilinx and Altera, use the power of Eclipse for their embedded software development tools. So – why is it not used for hardware design?

In hardware design, there is no big culture that uses IDEs. Quite the contrary: some early IDE attempts were overly *complex* and *locked* in the customer. There was not enough control over the project build cycle (simulation and synthesis) and people were disappointed with the new user interface, which over-emphasized the use of a mouse over keyboard shortcuts. These experiences have scared away some electronics engineers from IDEs in general, which is a shame.

Another reason why so few hardware designers use Eclipse today is the scarcity of EDA plugins. Recently, only a few open source projects existed that made a fair attempt at providing a plugin

Sigasi

automated hardware refactoring

for hardware description languages. However, now that Sigasi has released its Hardware Development Toolkit (HDT) as an industry ready Eclipse plugin, the tipping point has been reached.

More and more, the industries of EDA and electronics are discovering Eclipse and are slowly embracing it.

Where to from here?

As increasingly more EDA tools become available as Eclipse plugins, Eclipse truly becomes the central cockpit for hardware developers. Instead of learning to use several different tools with different keyboard shortcuts and GUI conventions, engineers will only have to face a single, smooth learning curve. Eclipse is a future proof platform that allows you to tailor your design environment to your specific needs.

Now is the moment to take some time to reevaluate IDEs for hardware design. Go download Eclipse, explore the plugins, and experience the power of a state-of-the-art hardware development cockpit. Read the full article at <http://www.sigasi.com/eclipse>. ■

Alcatel-Lucent's 200 millionth DSL line: special 'golden board' rolls off the tbp electronics production line

Tbp electronics Belgium and Alcatel-Lucent have celebrated delivery of Alcatel-Lucent's 200 millionth DSL line with the manufacture of a special golden board.



Anton Hermus, Chief Operations Officer of tbp electronics Belgium & Jürgen Lison, Vice-President of Alcatel-Lucent's fixed access activities.

To mark the event, the golden board has been inscribed with '200 Millionth Alcatel-Lucent DSL Line', and was presented to Jürgen Lison, vice-president of Alcatel-Lucent's fixed access activities, by Anton Hermus, Chief Operations

Officer of tbp electronics Belgium. Alcatel-Lucent's 200 millionth DSL line is destined for Telefónica, one of the world's largest telecommunications companies.

About tbp electronics

Tbp electronics is a leading Benelux integrated Electronics Manufacturing Services (EMS) Company providing end-to-end product lifecycle solutions that include design for manufacture and test, product development, procurement, PCB assembly, test, inspection, product- and cabinet building, repair and logistics services. Tbp defines itself as being in the 'business of perfection' and strives to provide its customers with excellence in the 5 Key areas of quality, reliability, flexibility, service, and pricing.

For over 30 years, tbp has been serving customers in the telecoms, ICT, media, entertainment, graphics, industrial, petrochemical, construction, shipping, broadcast, medical and defense sectors. Tbp electronics is a privately owned company employing over 400 people at its Geel, Belgium and Dirksland, the Netherlands sites. The company has sales offices in Belgium, the Netherlands and Germany.



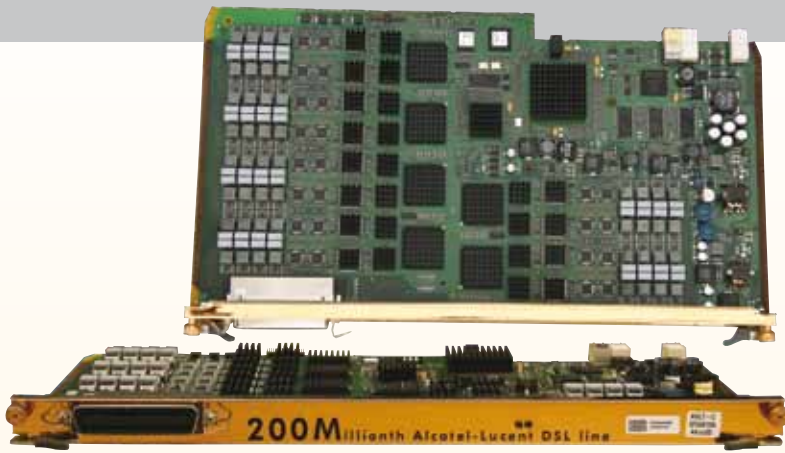
AnSem announces profit in 2009 and is awarded Trends Gazelle 2010

During the Annual General Meeting hold on April 20, 2010, AnSem's shareholders have approved the results of the fiscal year 2009. AnSem is pleased to announce that the company ended once more the fiscal year with a positive result. This sets AnSem's track record of profitability to the 12th year in a row and confirms AnSem's dedication to be a stable and solid partner to its customers.

Next to this, Trends announced on March 17, 2010 the Trends Gazelles 2010 for the province of Flemish Brabant (Belgium). AnSem obtained the 6th position in the category of small-sized companies.

Trends is a leading Belgian financial and business newsmagazine. As a Trends Gazelle, AnSem belongs to the fastest growing companies that significantly contribute to the economic dynamism of the region, in terms of employment,





Alcatel-Lucent 200 Millionth DSL Line manufactured by tbp electronics Belgium.

Since 1997, tbp electronics has been manufacturing DSL line cards for Alcatel-Lucent - which has been leading the DSL space on a year-to-date basis, and has been an uncontested global leader in overall fixed broadband access.

The relationship between the two companies dates back to the days when the tbp electronics Belgium site at Geel formed part of Alcatel-Lucent. The Geel site was first to industrialize Asymmetric Digital Subscriber Line (ADSL) technology, beginning with 4-subscriber lines/board, followed by 12, 24 and the 48 subscriber lines/board. The Geel site has also played an integral role in the design and development of test equipment for broadband products. Tbp electronics Belgium's experience in broadband technology comprises DSL (Digital

Subscriber Line), BRAS (Broadband Remote Access Server)/NGN (Next Generation Networking), and Internet core routers.

"Alcatel-Lucent's continuous innovation in broadband access is inspiring and we are proud to mark this very special milestone with Alcatel-Lucent," commented Anton Hermus, COO of tbp electronics Belgium. *"Our relationship is based on a shared wealth of knowledge and experience of broadband technology that covers well over a decade. This, together with our customer-centric approach, doing everything we can to minimize time-to-market, while guaranteeing quality and improved performance is our recipe for a continued successful relationship,"* concluded Hermus. ■

About Alcatel-Lucent

Alcatel-Lucent (Euronext Paris and NYSE: ALU) is the trusted transformation partner of service providers, enterprises, strategic industries such as defense, energy, healthcare, transportation, and governments worldwide, providing solutions to deliver voice, data and video communication services to end-users. A leader in fixed, mobile and converged broadband networking, IP technologies, applications and services, Alcatel-Lucent leverages the unrivalled technical and scientific expertise of Bell Labs, one of the largest innovation powerhouses in the communications industry. With operations in more than 130 countries and the most experienced global services organization in the industry,

Alcatel-Lucent is a local partner with a global reach. Alcatel-Lucent achieved revenues of Euro 15.2 billion in 2009 and is incorporated in France, with executive offices located in Paris.

Trends
GAZELLEN
2010



About AnSem

AnSem is a fabless IC design company, founded in 1998. Specializing in the state-of-the-art design of high-performance analog and mixed-signal integrated circuits in the most advanced technologies, AnSem offers design services and products for wireless communication, high-speed data communication and data acquisition. AnSem provides cost-effective turnkey solutions using the latest technology with emphasis on best time to market. The company is based in Leuven, Belgium, home to Europe's DSP Valley technology network organization, and is a member of the DSP Valley and the Global Semiconductor Association (GSA)

innovation, competitiveness and creative entrepreneurship.

"Although the economy has been challenging in 2009, AnSem has been able to finish the year with a positive result and a strong balance sheet. This financial solidity in combination with a steady growth of the first class design team and state-of-the-art analog & mixed signal IC design capabilities allows AnSem to be a long term reliable partner for its customers", said Stefan Gogaert, AnSem's CEO. ■

Barco Silex participates in the COHESI community, a new initiative coordinated by imec



COHESI is the Flemish innovation platform for component development and complex heterogeneous system integration. COHESI is a collaboration between imec and research groups at K.U.Leuven, UGent and Vrije Universiteit Brussel. The platform aims to:

- strengthen the collaboration between Flemish companies and knowledge centers to support the development of innovative smart microsystems, from idea over prototype to product
- facilitate access to the expertise and services present in the different knowl-

edge centers participating in the COHESI innovation platform

- strengthen the Flemish ecosystem in the domain of smart microsystems

In order to support companies in the development of smart microsystems, the participating knowledge centers offer together a broad and complete spectrum of expertise, services and infrastructure. To facilitate access to this platform, the COHESI community is organized, in which companies can actively participate.

The aim of Barco Silex's participation to the COHESI community is:

- to get early insight in microsystem related R&D at the participating knowledge centers, during regularly organized workshops. Next to the R&D

related presentations, the workshops will also address examples of actual development trajectories at Flemish companies, presentations addressing risks and costs, dedicated funding opportunities etc.

- to have access to a dedicated evaluation service which offers to :
 - (i) identify the required technology building blocks to realize an idea, and advising on which route(s) best to take to obtain these building blocks
 - (ii) indicate whether the expertise is available in Flanders
 - (iii) define an order-of-magnitude estimate of the cost and required time for a certain development trajectory
- to have access at reduced cost to a training program dedicated to microsystem development ■

DSP Valley's Internationalization Continues

Preface

Last year, DSP Valley started to build a European network of networks in Embedded Systems & Technology. Together with our partners System@tic Paris Region in France, the Electronics Knowledge Transfer Network in the UK, and the ARCSIS-network from the cluster Systèmes Communicantes Sécurisées in the south of France, we have been organizing some successful European B2B matchmaking events. At this time, we already know that these matchmaking events have resulted in some new contractual partnerships, including companies both from DSP Valley side and from the other clusters.

The resulting successes have inspired DSP Valley to continue this initiative. Therefore we have submitted new project proposals, for financial support of this internationalization by IWT, the Flemish agency for Innovation by

Science and Technology. Recently, IWT has confirmed that the 2 submitted project proposals have been awarded with a contract, confirming their continued support for this international expansion of the DSP Valley networking activities for the next 2 years.

In the mean time, DSP Valley has not waited for the decision of IWT and has already set up new intercluster matchmaking activities. DSP Valley has started cooperation with a new partner: the German networking organization BICC-Net, the ICT-cluster located in Bayern. At the occasion of Embedded World, the exhibition on embedded systems in Nuremberg, we have already offered a first introductory activity for our DSP Valley and BICC-Net members; this activity has also been joint by a delegation of System@tic companies: during the exhibition, we have made a guided

tour with the 3 clusters to the booths of all exhibiting cluster members. And also in March, a DSP Valley delegation of 10 companies has visited Munich for a first formal intercluster B2B matchmaking with BICC-Net. Also System@tic and E-KTN have joint this matchmaking event, making it a truly European intercluster B2B matchmaking event.

The initiative of these clusters and networking organizations of building a European network of networks in Embedded Systems and Technologies, is rapidly gaining importance, since each partner cluster is introducing his own partners: System@tic has introduced BICC-Net to DSP Valley, DSP Valley has introduced E-KTN to System@tic and BICC-Net..., bringing important benefits to all their members, in creating a competitive advantage by realizing a unified European market for Embedded Systems.

Target Compiler Technologies signs Acetronix as its agent for Korea

Target Compiler Technologies, the leader in EDA design tools for application-specific processors (ASIPs), and Acetronix, a leading South Korean supplier of semiconductor and software products, are pleased to announce that they have signed an exclusive agency agreement for the South Korean market. This agreement is the next step in the strategy of Target to establish local representations in regions with a high concentration of semiconductor design centers active in the development of advanced systems-on-chip (SoCs).



Acetronix, headquartered in Seoul, will provide sales and marketing support for Target's IP Designer and IP Programmer EDA tools.

DSP Valley strongly believes that this is the only way to remain competitive in a global market. By joining forces with clusters and networks in the neighboring countries, we create a sustainable innovation ecosystem, with a lot of partnering opportunities, keeping us ahead of competition.

We are already looking forward to further expanding our network of networks, and we hope to meet you at one of our upcoming intercluster matchmaking events.

Peter Simkens
Managing Director
DSP Valley



"The technology of Target to design, optimize, verify, integrate and program ASIP cores is very interesting for leading chip manufacturers and fabless semiconductor vendors in Korea. We see a growing number of companies in Korea that design advanced SoCs with stringent performance, power consumption and cost requirements, and are interested in the flexibility offered by ASIPs," said Sung Ho (Shane) Rhee, CEO of Acetronix.

Target already gained traction within the Korean SoC design community, e.g. through its collaboration with ETRI, Korea's leading research center for electronics and telecommunications. *"For a number of years, we've been using Target's IP Designer tool-suite to design and program our media processor called EMP,"* said Young-Su Kwon, lead architect at ETRI. *"The automatically generated software development kit has enabled us to deploy our media processor with Korean fabless chip manufacturers. We are pleased to see Target engaging further in the Korean market, so that chip or system manufacturers and design houses can take advantage of the excellent tools offered,"* Kwon added.

Gert Goossens, CEO of Target commented: *"Korea is a very important market for our products as it has a large number of innovative chip design companies. Today, the country is moving towards system-on-chip design, in which ASIPs*

are playing an increasingly prominent role. Acetronix is the ideal partner to enter Korea, because of its knowledge and long-standing relationship with the key players in the Korean semiconductor market." ■

About Target Compiler Technologies

Target Compiler Technologies is the leading provider of retargetable software tools to automate the design, programming and verification of application-specific processor cores (ASIPs). Target's IP Designer tool suite has been applied by customers worldwide for diverse application domains, including DECT, GSM, WCDMA, HSDPA and LTE handsets, VoIP, audio coding, car infotainment, ADSL and VDSL modems, wireless LAN, hearing instruments, mobile image processing, video processing, and automotive control applications. Target is a spin-off of imec, is headquartered in Leuven, Belgium, with North American operations in Boulder, Colorado.

About Acetronix

Acetronix was established in 1991 with a mission to provide superior technical representation and to add value to a focused group of leading-edge corporations by offering synergistic, valuable and highly innovative solutions for our customers' design, procurement and manufacturing needs. Acetronix focuses on continuous improvement on quality, service, and productivity, and hence provides value to both customers and vendors.

ASD Software Patent Awarded to Verum

Patent recognizes Verum's groundbreaking method for enabling software architects to profit from the science of Formal Methods without having expertise in mathematics.

verum
Tools for building mathematically verified software

Verum Software Technologies announced that it received a European Patent on its Analytical Software Design (ASD) technologies during the company's annual ASD User Group event in Eindhoven, The Netherlands. The patent (# EP1749264) recognizes, for the first time, an elegant method of applying Communicating Sequential Processes (CSP - a Formal Methods technique) algebras to develop defect free software architectures and software codes which are event driven and exhibit lots of concurrency. In the past, software architects were not able to enjoy the benefits of Formal Methods as they were deemed too difficult to learn, understand, and too

expensive to apply and maintain for common code bases.

The ASD patent describes an integrated model based tool which allows software development experts to produce formal specifications and verified system designs that fully integrate into existing conventional software development processes. Fully integrated in this context means that there are continuous feedback loops into the software development process for handling errors extensions and modification arising in standard software development processes. A typical process is shown here in Figure 1, highlighting the functionality of ASD in such a process. The gap between the formal specifications and designs produced using ASD and

the rest of the software development cycle is bridged for the first time. The consequence of this is that traditional errors made during requirements analysis, architecture specification and design, component specification and design are prevented from reaching the implementation, testing, and integration phases of software projects.

About Verum's ASD:Suite

Verum's ASD:Suite software design toolset eliminates all behavioural defects from complex software designs, dramatically cutting the cost of software development, testing and maintenance. ASD:Suite automatic code generation further reduces the cost of software development by 30% per delivered line of code. The key difference between Verum's ASD:Suite and tools that claim to improve productivity is Verum's Analytical Software Design formal verification technology; ASD allows the design of a software system to be mathematically verified as complete and correct, even before a single line of code has been written. Java

Guy Broadfoot, the co-inventor of ASD, and Verum's C.T.O. said, "Hardware logic designers have long enjoyed the benefits of electronic design automation (EDA) tools enabling them to verify complex designs before implementation. ASD is a major step towards the goal of software design automation (SDA), being the first tool chain to make software design time verification a routine reality for software engineers. The patent grant is a very exciting milestone for Verum recognising as it does the unique contribution of Verum in this field."

The ASD patented technology is made available to users via an integrated desk top application called ASD:Suite. The application is shown in Figure 2. Users build proprietary models via a desktop client protecting their IP, and check these models using the patented ModelChecker technology which runs on Verum's servers. Once this step is complete, another patented component, the ASD CodeGenerator, automatically generates source codes in a variety of commonly used programming languages (C, C++, Java, C#) from the verified designs. This is a crucial part of

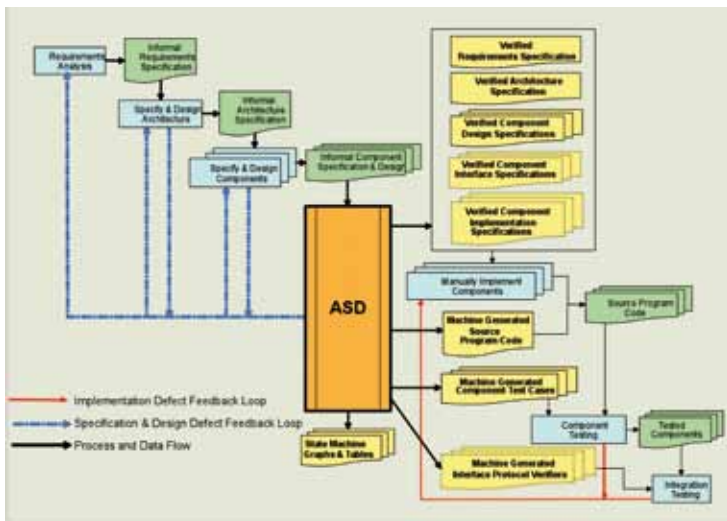


Figure 1 - The role of ASD in model based software development processes. The yellow boxes represent outputs from Verum's patented technology

About Verum Software Technologies B.V.

Verum Software Technologies is a young software tools company focused on turning the art of software development into a fact based science. By adopting formal math based principals for embedded software development, embedded software manufacturers guarantee that such software codes are genuinely defect free in the 21st century. Verum employs a team made up of Formal Methods, Embedded Software Architects, and Embedded Software Tools experts to develop state of the art tools for achieving this goal. The company also provides consulting support to help propagate this paradigm shifting way of working in the software industries of the world.

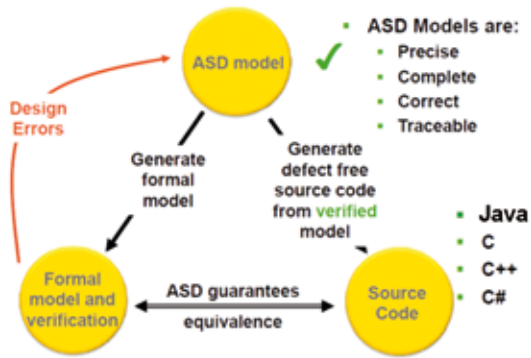


Figure 2 ASD:Suite Components

the invention as it ensures that no human errors are introduced into the verified designs and it vastly speeds to process of generating production quality code.

Thus far numerous customers such as Philips Medical Systems, Bosch, Logica, FEI, and others are using ASD in several countries around the world. Most projects involve generating tens or hundreds of thousands of lines of codes mathematically proven to be defect free. ■

DSP Valley @ Embedded World 2010 2 - 4 March 2010, Nuremberg, Germany



For the eighth time DSP Valley was present at the Embedded World Exhibition&Conference. According to the exhibition organizer 730 exhibitors from 30 countries showed their products and services. Despite the world wide crisis this is clearly an increase compared to last year. With 18.350 trade visitors, a new record, this event clearly proves to be one of the biggest get-togethers for the embedded industry in Europe.

As a good tradition there was the presentation of the Embedded AWARD on the opening evening. The award is adjudged to companies that have made a remarkable contribution to embedded technology. The prize winners in the three categories were: Energy Micro (Hardware category), Mentor Graphics (Software category) and Hitex Development Tools (Tools category).

DSP Valley, distinguishing itself as a center of excellence in DSP and embedded systems design, was present with five of its members: Easics, Essensium/Mind, /k/ Embedded Java Solutions, Target Compiler Technologies and Tbp electronics. The group booth was located in hall 12, the biggest of the four exhibition halls. New this year was the extra activities DSP Valley organized in collaboration with its sister technology clusters called BICC-NET from the Munich region and the System@tic cluster from the Paris region in France. At the end of day two a joint networking diner was scheduled with the companies from the 3 clusters as a first step to get into contact with each other. On the last day of the exhibition, a guided tour starting at the DSP Valley group booth and going along the different cluster members, gave the participating companies already a first

glimpse of the products and services offered by the others. These two extra activities were much appreciated by the members of all three clusters and they are the first step towards the intercluster brokerage event which was scheduled on March 24 in Munich and hosted by BICC-NET.

Participation at the group booth of DSP Valley is a good chance for the smaller companies in the network to be present in a cost efficient way. The co-exhibitors keep their own identity in the exhibitor list on the Embedded World website, in the exhibitor catalogue and on the booth but the booth was set up in such a way that a common look and feel was shown. For DSP Valley it is a unique opportunity to present itself and its activities to the embedded community. Apart from the group booth two other DSP Valley members, Altreonic and Deltatec had their own booth in other exhibition halls.



The embedded world 2011 Exhibition&Conference takes place in the Exhibition Centre Nuremberg from 1-3 March 2011. ■

Course ‘Advanced Verification – an introduction’

<http://www.imec.be/mtc>



Imec, Leuven, Belgium
May 3, 10, 17, 25, 31, 2010

The imec Microelectronics Training Center is organizing a new course: “Advanced Verification – an Introduction”. The 5-day course will be scheduled on 3rd, 10th, 17th, 25th and 31st May.

The 3 major topics that will be covered are:

1. System Verilog for verification
2. Assertion based verification
3. OVM – open verification methodology

The ever increasing size and complexity of ASICs require new verification methods. Traditional ‘directed test’ type of simulation requires ever more manpower and long run-time to verify your latest RTL design. A whole new bunch of tools and methodologies has reached the maturity level to immediately be helpful for ASIC verification. As there are: Power Aware Verification (Voltage islands, Power shut down), random stimuli generation, coding rule checkers, object oriented test bench construction and assertion based verification.

The course targets design engineers, verification engineers and engineering managers.

After following the course, you will have a basic understanding of these new tools and methodologies, and will be ready to introduce them in your next project.

Prerequisite knowledge:

- Synchronous digital design methodology
- RTL design with hardware description languages
- Object oriented programming concepts

For more information or to subscribe: training@imec.be and www.imec.be/mtc.

Exploring the IC ecosystem in DSP Valley

<http://www.dspvalley.com>

imec, Leuven
May 26, 2010



On May 26, 2010 DSP Valley and imec will organize a seminar in which different aspects of the IC value chain



will be illustrated with concrete cases. After attending this seminar you will realize that the IC ecosystem is closer to your business than might be expected. The expertise available in the ecosystem not only allows you to make ICs with high complexity but it can also be beneficial for systems with a lower degree of

complexity. Obviously, collaboration with local partners is important for successful projects.

More details will be announced later. For more information please contact Filipie Vincent, (filiep.vincent@dspvalley.com) or Bart De Mey (bart.demey@imec.be)

LICT Industrial Affiliation Day

<http://www.esat.kuleuven.be/LICT>

K.U. Leuven, Heverlee, Belgium
June 3, 2010



On June 3rd, 2010, the Leuven Information and Communication Technology Center (LICT), that serves within the K.U.Leuven as a one-stop contact point for industry and government for all research questions related to ICT, organizes its first “Industrial Affiliation Day”. The primary goal of such Industrial Affiliation Day is to allow members of the LICt’s Industry Affiliation Program to get (annually) an in depth overview of the ICT-related research at the K.U.Leuven.

For this first edition in 2010 participation to the LICt Industrial Affiliation Day is still **open to all interested parties**. During

the event the research activities of the LICt members will be presented both by means of presentations and poster sessions. Invited keynote speakers will testify on the importance of industrial-academic research collaboration. During the breaks there will be plenty of opportunities for

the attendees to network and to discuss with LICt’s professors and researchers.

For more information please contact Greet Bilsen (LICTcoordinator@esat.kuleuven.be) or visit the activities page on the LICt-website.

About LICt

LICT is a cross-departmental, multidisciplinary research center that bundles the complementary expertise of electronic engineers, computer scientists, sociologists and law experts from the K.U.Leuven and its association partners who are active in the area of ICT. The mission of the center is to “coordinate and promote top-level research on the design and application of ICT systems, both hardware and software, in support of industry and society”. It currently represents about 50 professors and more than 350 researchers from multiple research groups and is organized around seven research lines: “wireless communication systems”, “mixed-signal interface systems”, “embedded systems and software”, “distributed software”, “ICT security”, “human-machine interaction” and “knowledge technologies”.

9th International Conference and Workshop on Ambient Intelligence and Embedded Systems (AmiEs-2010)

KHK, Geel, Belgium
September 30- October 1, 2010

The KHK will organize the 9th International Conference and Workshop on Ambient Intelligence and Embedded Systems (AmiEs-2010) on 30 September and 1 October 2010.

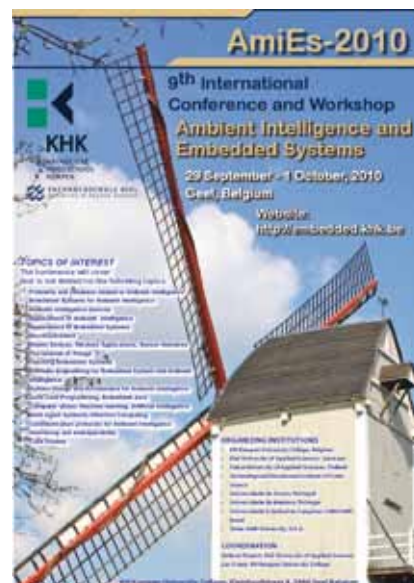
During this international event, designers and applicants of Embedded Systems and high end electronics become acquainted with the latest technologies and interchange ideas with colleagues. The workshop is intended to bring together technology and education.



The workshop is open to the public the entire day. Prominent suppliers of embedded systems and design automation present innovative developments and technologies for a faultless and smooth design flow.

The 9th International Conference offers the latest tooling technology and contacts necessary for performance improvement of embedded systems to developers.

<http://embedded.khk.be>



Acivs 2010

Advanced Concepts for Intelligent Vision Systems
Macquarie University, Sydney, Australia
December 13-16, 2010

Acivs 2010 is a conference focusing on techniques for building adaptive, intelligent, safe and secure imaging systems. Acivs 2010 consists of four days of lecture sessions, both regular and invited presentations, poster sessions and a special session on Distributed Camera Systems.

Acivs 2010 will also feature a conference dinner, and other social activities. The conference fee includes the social program (conference dinner, opening reception, and cultural activities), coffee breaks, daily lunches and a hard-copy of the proceedings.

Conference topics include (but are not limited to)

- Vision systems, including multi-camera systems
- Image and Video Processing (linear/non-linear filtering and enhancement, restoration, segmentation, wavelets and multiresolution, Markovian techniques,

color processing, modeling, analysis, interpolation and spatial transforms, motion, fractals and multifractals, structure from motion, information geometry)

- Pattern Analysis (shape analysis, data and image fusion, pattern matching, neural nets, learning, grammatical techniques) and Content-Based Image Retrieval
- Remote Sensing (techniques for filtering, enhancing, compressing, displaying and analyzing optical, infrared, radar, multi- and hyperspectral airborne and spaceborne images)
- Still Image and Video Coding and Transmission (still image/video coding, model-based coding, synthetic/natural hybrid coding, quality metrics, image and video protection, image and video databases, image search and sorting, video indexing, multimedia applications)
- System Architecture and Performance Evaluation (implementation of algorithms, GPU implementation, benchmarking, evaluation criteria, algorithmic evaluation)

Both classical research papers and application papers are welcome.

<http://acivs.org/acivs2010/>



Special session on distributed camera systems

Single camera vision is a process that loses information by projecting a 3D scene on the 2D image sensor. In order to retrieve 3D scene information either depth cameras, object motion or multiple view directions are necessary. In this special session we invite papers on intelligent vision systems that explicitly make use of multiple cameras or multiple visual sensors to approach a vision challenge.

Example Areas of Interest:

- 2D/3D occupancy sensing
- 3D industrial and agricultural vision applications
- Automotive applications
- Geographical mapping applications
- Multi-view based robot control

Venue

The conference will take place in the Macquarie University, Sydney, Australia on Dec. 13-16, 2010.

Deadlines

May 1, 2010: Full paper submission
 July 15, 2010: Notification of acceptance
 September 7, 2010: Camera-ready papers due
 September 1, 2010: Registration deadline for authors of accepted papers
 October 1, 2010: Early registration deadline
 Dec. 13-16, 2010: Acivs 2010

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QSpin, new member of DSP Valley • p.1

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Jabil develops a multi-media platform for consumer products • p.2

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Portable, easy-to-wear mind speller - Typing words with your brain • p.4

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Wireless Nodes are talking Gossip (2) • p.5

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SiTel and Target partnership yields powerful VoIP DSP • p. 6

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Why hardware designers should switch to Eclipse • p. 7

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Alcatel-Lucent's 200 millionth DSL line: special 'golden board' rolls off the tbp electronics production line • p.8

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AnSem announces profit in 2009 and is awarded Trends Gazelle 2010 • p.8

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Barco Silex participates in the COHESI community a new initiative coordinated by imec • p.10

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Target Compiler Technologies signs Acetronix as its agent for Korea • p.11

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ASD Software Patent Awarded to Verum • p.12

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Embedded Corner • p.12

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