FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

SPRING 2012

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EU Agrees Mobile Roaming Price Cuts

The cost of using mobile phones when travelling within Europe will be reduced from July after cuts to roaming costs were agreed by European Union policy makers.

The charge for using data services such as email and web browsing will be capped at 70 cents a megabyte, a fraction of the €2-€5 charged by most operators across the EU. The cap will fall to just 20 cents by 2014, all but eliminating a lucrative sideline for telecoms operators. Many of their share prices dropped after the agreement.

How Mobility Is Stressing The Chip Industry

Qualcomm last week said it was having problems finding enough capacity to manufacture chips designed for mobile phones, something that's likely to become more common as the physics that govern how we make semiconductors buckles under the demands of our increasingly mobile lives. But this isn't just about Moore's Law; this is a story of how the demands for more performance, less power and smaller sizes are all combining to force changes in the chip industry.

Traditionally, chips are made using a process that involves layering materials on top of a silicon wafer. Those materials are built up into the transistors, gates and other formations that allow a computer program to read the ones and zeros of digital language and turn them into a Netflix video on your tablet or a Tweet from your phone. For decades engineers have managed to push more transistors onto a chip by shrinking the amount of space between them, something called moving down the process node.

4M Wireless licenses LTE protocol stack to Wuxi DSP

LONDON – 4M Wireless Ltd. (Luton, England) has licensed its Terminal LTE protocol stack to Wuxi DSP Technologies Inc. (Wuxi, China) and its subsidiary company Optimum Semiconductor Technologies Inc. (Tarrytown, New York).

The agreement will enable Wuxi DSP to develop the LTE-TDD trunk communications for the wireless infrastructure of private network markets in China, said 4M Wireless in a statement.

ARM to Set Up Digital Security Joint Venture

U.K. microchip designer ARM Holdings ARMH -2.24% PLC is setting up a joint venture with two European companies to speed up the adoption of a security standard for online transactions on mobile devices and game consoles.

ARM will own 40% of the joint venture, with Amsterdam-based digital-security company Gemalto NV GTO.FR -0.99% and Munich-based technology company Giesecke & Devrient GmbH each taking a 30% stake.

The majority of mobile devices uses chips from companies that license designs from ARM, which is pushing deeper into security.

ARM Launches Processor Pack For Big-Little On TSMC 28-Nm

LONDON – Processor and related intellectual property licensor ARM Holdings plc has expanded its range of processor optimization packs (POPs) available for 40-nm and 28-nm manufacturing processes from foundry Taiwan Semiconductor Manufacturing Co. Ltd.

While companies can licenses cores and architectures and then design SoCs but this can be a slow and expensive business. For the last two years ARM (Cambridge, England) has been licensing processor optimization packs (POPs) as additional support which demonstrates how to implement a core to achieve specific area, power, performance trade-offs.

Broadcom Buys Fibre Networking Firm Broadlight

Chip maker Broadcom Corporation has signed a definitive agreement to acquire BroadLight, Inc., a provider of fibre access PON (Passive Optical Network) processors, for Rs.965.35 crore ($195 million).

The company will pay additional Rs.49.50 crore ($10 million) to holders of BroadLight capital stock upon satisfaction of certain performance goals.

Broadcom said the acquisition will help the company expand its broadband access portfolio to support customer requirements for rolling out next-generation fibre networks worldwide.

Cambridge Firm Streamlines DSP For Low Power Wireless

For battery powered wireless products traditional digital signal processors (DSPs) are often the largest, highest cost and most power-hungry components. This is a significant barrier to wireless product designers looking to improve performance, reduce cost and reduce size of their wireless Asics and FPGAs.

More often than not then the DSP is the key barrier to improving performance and cost reduction due to the need for optimised hardware.

At Cambridge Consultants we see many clients with similar requirements for their wireless Asics - fast predictable data processing and a rapid low-risk development programme. However, their applications can only be successful if the DSP function has similar cost and power consumption to an optimised hardware design; yet their system requirements, competitive landscape, or the fact that radio standards are not yet fully defined, mean that they need to retain software flexibility.

Silicon Germanium Grown Monolithically To Avoid Crystal Defects

A research team from ETH Zurich, CSEM, the Politecnico di Milano and Università di Milano-Bicocca manufactured defect-free structures of different semiconductors on silicon wafers, using semiconductor manufacturing processes.

The structures are grown monolithically, with silicon wafers pattered via photolithography and etched into a structure with trenches separating elevated regions (see the image).

This allows arrays of individual crystals separated by gaps in the tens of nanometers. Trench depth typically exceeds width (a few micrometers). Semiconductor structures are then grown on each elevated area, with minimal separation of neighboring crystals.

New iPad Includes Part From One Of Silicon Valley's Oldest Names

Fairchild Semiconductor's shares surged 4.5% Thursday as teardown shop iFixit revealed the new iPad — which goes on sale Friday — contains a key part supplied by the San Jose, California-based semiconductor company.

The new iPad includes Fairchild's FDMC8651, a "30V N-Channel Power Trench MOSFET" used to "improve the efficiency of DC/DC converters," according to Fairchild's spec sheet.

Fujitsu Semiconductor Adopts Cadence Chip Planning System For MCU Chips At Its Design Centers Worldwide

SAN JOSE, CA, May 08, 2012 (MARKETWIRE via COMTEX) -- Cadence Design Systems, Inc. CDNS +0.63% , a leader in global electronic design innovation, today announced that Fujitsu Semiconductor Limited has adopted the newly updated Cadence Chip Planning System at its nine design centers spread around the globe. Fujitsu Semiconductor chose the Cadence system because of the time, accuracy and cost benefits it offers in the development of its MCU chips requiring large-scale integration (LSI).

IDT Acquires Fox Electronics

SAN JOSE, Calif., Apr 30, 2012 (BUSINESS WIRE) -- Integrated Device Technology, Inc. (IDT(R)) (NASDAQ: IDTI), the Analog and Digital Company(TM) delivering essential mixed-signal semiconductor solutions, today announced that it has acquired Fox Electronics, a leading global supplier of frequency control products (FCPs), in an all-cash transaction for approximately $30 million, of which $26 million was paid at closing. Fox Electronics' revenue was approximately $23 million in calendar year 2011, and the company is profitable.

"Fox's crystal, crystal oscillator and innovative XpressO products combined with IDT's award-winning CrystalFree(TM) solutions make us the industry's most comprehensive one-stop shop for frequency control products," said Ted Tewksbury, president and CEO at IDT. "In addition, Fox helps accelerate the adoption of CrystalFree by enabling customers to purchase pMEMS and CMOS solid-state oscillators alongside traditional quartz-based components through an established and trusted sales channel."

Imagination Wants 200 More People

Imagination Technologies wants to recruit 200 people but cannot get enough good engineers in the UK, CEO Hossein Yassaie tells The Daily Telegraph this morning.

100 of the jobs will be for freshly-fledged graduates but, points out Yassaie, 85-90% of the post-grad engineering students in the UK are from overseas and they go home after getting their degrees.

Which is why Imagination has expanded its design centres in Poland and India and is looking to buy companies just to get hold of their engineers.

He would like more incentives for his engineers and one way would be a return of taper relief on capital gains tax where the longer you hold shares the less tax you pay on the gain. “Shares are so heavily taxed that their value as an incentive is not as strong as it should be,” says Yassaie.

Cappuccino And Croissant? Just Tap And Go: Infineon’s Security Chip For Europe’s Biggest Contactless Bank Card Project

Neubiberg, Germany – April 17, 2012 – Long waits and rummaging for small change to pay for coffee and a newspaper on the way to work? Potentially a thing of the past in Germany’s metropolitan area Hanover, Braunschweig and Wolfsburg: There, the German Banking Industry Committee (Deutsche Kreditwirtschaft) today launches its “girogo” project: Europe’s biggest contactless payment trial. Over 1.3 million bank and savings bank customers will now be offered tap-and-go facilities in an array of shops and filling stations for fast and easy payment of sums up to 20 Euros. An integrated security chip from Infineon Technologies is the first in the world to hold German Banking Industry Committee’s approval for the new contactless bank cards.

The girogo bank card is a so-called dual interface card: the customer can continue to use it for contact-based payment by inserting the card into a payment terminal. For contactless payment, the buyer no longer has to insert his card into a reader. He simply holds his card bearing a contactless chip in front of the reader at the check-out. No signature or PIN entry is required, meaning the payment process takes less than a second. By using the contactless-technology customers can pay small amounts of up to 20 EUR in a quick and convenient way.

Intel Targets Smart Tvs With Atom CE5300 Chip

Intel has unveiled a new media processor called the Intel Atom CE5300 for set-top boxes and media gateways. The processor, previously codenamed ‘Berryville’, is intended to be “the brains in a set-top box that seamlessly combines the Internet with TV.”

The chip boasts 3D user interface and console-level graphics for gaming, and also allows video conferencing with friends and family. Intel announced this processor at the IPTV World Forum in London.

First Intel-Inside Phone Hits Indian Stores

Intel in partnership with handset manufacturer Lava International announced the launch of first smartphone with Intel Atom inside, in India. The Xolo X900 will be available for purchase beginning April 23 at a street price of Rs 22,000.

Lava Xolo X900 is based on Intel's smartphone reference design featuring the Intel 1.6GHz Atom processor Z2460 with Intel Hyper Threading Technology and supporting HSPA+ 3G connectivity.

Heads Up, Intel: TSMC Cranks Up ARM Chip To 3ghz

Taiwan Semiconductor Manufacturing Company has ripped a page right out of the Intel playbook.

TSMC announced today that a chip rolling off its advanced 28-nanometer manufacturing process was jacked up to 3.1GHz -- unheard of in the annals of ARM-based mobile system reviews.

Intel, of course, is not a stranger to fast frequencies. Its high-performance Core i desktop processors run well more than 3GHz, and even its higher-end mobile parts are rated close to 3GHz.

But that's unfamiliar territory for ARM, which is known more for power efficiency than raw power.

More specifically, the TSMC chip is a dual-core A9 today that "achieved 3.1GHz...under typical conditions" using "high performance for mobile applications" (HPM) process technology, said TSMC.

NEC Develops Ultra-Thin Battery

NEC has announced the development of an ORB (organic radical battery) which it says can be printed into circuit boards as thin as 0.3mm. The battery is suitable for applications like IC cards, electronic paper and other technologies.

These new, 0.3mm ORBs are less than half the thickness of existing units, a size reduction that was accomplished by using printing technologies to integrate circuit boards with batteries. As a result, IC cards embedded with these batteries can be used for a wide range of functions, including displays, transmission and advanced encryption processing, NEC said.

NXP And HID Global Enable Mobile Access For NFC Phones

EINDHOVEN, Netherlands & IRVINE, Calif.--(EON: Enhanced Online News)--NXP Semiconductors N.V. (NASDAQ: NXPI) and HID Global, both trusted leaders in solutions for the delivery of secure identity, today announced their collaboration to introduce a global, generic Mobile Access solution for NFC-enabled mobile phones. NFC enables the secure and convenient sharing of information from one device to another over short distances based upon existing contactless standards, making it ideal for deploying easy-to use mobile access control applications.

HID Global and NXP helped create the current market for card-based physical access systems and are now jointly moving these solutions to mobile phones as NFC becomes a standard feature.

ST-Ericsson Transfers R&D Unit To ST, Cuts 1700 Jobs

ST-Ericsson, the loss making mobile chip joint venture between STMicroelectronics and Ericsson, has announced guidelines of a new strategic direction. As a part of restructuring, the company plans to cut 1,700 jobs worldwide, and aims to achieve annual savings of about Rs.1,632.65 crore ($320 million) by 2012 end.

The company announced its plans to transfer its stand-alone application processor activities to STMicroelectronics. However, it wants to re-affirm its vision to be a leader in smartphone and tablet platforms. The new strategic direction leverages on ST-Ericsson's capability to deliver complete system solutions for smartphones and tablets; specifically competitive integrated modem plus application processor solutions (ModAp).

Synopsys, Applied Materials join forces to develop new TCAD models

Sentaurus TCAD tool suite encompasses front-end-of-line processing and back-end-of-line reliability

Electronic design automation (EDA) firm Synopsys and semiconductor equipment manufacturer Applied Materials have collaborated to develop technology computer-aided design (TCAD) models for next-generation semiconductor devices.

The collaboration encompasses front-end-of-line (FEOL) processing, including process, topography and device simulation and back-end-of-line (BEOL) reliability, including interconnect simulation.

TSMC, Altera Team On 3-D IC Test Vehicle

SAN FRANCISCO—Claiming an industry first, foundry Taiwan Semiconductor Manufacturing Co. Ltd. (TSMC) and programmable logic vendor Altera Corp. Thursday (March 22) announced the joint development of a heterogeneous 3-D IC test vehicle using TSMC's chip-on-wafer-on-substrate integration process.

TSMC (Hsinchu, Taiwan) said its chip-on-wafer-on-substrate process is an integrated process technology that attaches device silicon chips to a wafer through a chip-on-wafer bonding process. The chip is attached to the substrate to form the final component. By attaching the device silicon to the original thick wafer silicon before it finishes the fabrication process, manufacturing-induced warping is avoided, TSMC said.

TSMC Zaps 3.1ghz ARM Processor With 28nm Shrink Ray

If you thought there was pressure on chip foundry Taiwan Semiconductor Manufacturing Corp (TSMC) up until now - with Nvidia and AMD leaning on the fab to crank out more GPUs and in the case of AMD, more hybrid CPU-GPUs - wait until the army of designers and sellers catch wind of its 28nm Cortex-A9 ARM RISC processors.

TSMC has put a dual-core 32-bit Cortex-A9 processor test chip through the fab dryer and brought it down from 40nm using its latest process (known as 28HPM). The silicon biz was able to crank up the clock speed on the A9 to a comfortable 1.5GHz to 2GHz in a thermal and power-draw band suitable for smartphones and tablets, and pushed the clocks up as high as 3.1GHz for other "high performance" and unnamed uses under "typical conditions" - like perhaps microservers, for instance.

Google Heightens Rivalry With iPad .

Google Inc., GOOG -1.11%undaunted by a short-lived attempt to market and sell smartphones on its own, is now trying the approach with tablet computers in a quest to capture market share from Apple Inc.'s AAPL -1.72%iPad.

The Internet search company will sell co-branded tablets directly to consumers through an online store like rivals Apple and Amazon.com Inc., AMZN -1.04%according to people familiar with the matter. The move is an effort to turn around sluggish sales of tablet computers powered by Google's Android software.

Jellyfish-Like Robot Built On Nanotechnology

A team of researchers have created a jellyfish-like robot based on nanotechnology. The hydrogen-powered 'Robojelly' is an undersea vehicle that could be used in ocean rescue and surveillance missions.

Researchers at The University of Texas at Dallas and Virginia Tech claim 'Robojelly' feeds off hydrogen and oxygen gases found in water. The study has been published in Smart Materials and Structures.

Transparent 3D Memory Chips To Replace Flash Drives

Researchers at Rice University have created a new 3D memory chips that are transparent, flexible enough to be folded like a sheet of paper, and capable of withstanding 1,000-degree Fahrenheit temperatures.

"Devices with these chips could retain data despite an accidental trip through the drier, or even a voyage to Mars. And with a unique 3D internal architecture, the new chips could pack extra gigabytes of data while taking up less space," said James M. Tour, Ph.D., who led the research team, while speaking at the National Meeting & Exposition of the American Chemical Society.

Titanium Nitride May Pave Way For New Optoelectronic Devices

Researchers at Prude University have used a thin film of titanium nitride into transporting plasmons. Plasmons are tiny electron excitations coupled to light that can direct and manipulate optical signals on the nanoscale.

According to researchers, titanium nitride's addition to the short list of surface-plasmon-supporting materials, formerly comprised only of metals, could pave the way to a new class of optoelectronic devices with unprecedented speed and efficiency.

A 3D Camera That Sees "Around Corner"

Scientists at Massachusetts Institute of Technology (MIT) have developed a camera using "bursts of light" that can capture three-dimensional images of objects hidden around a corner.

"The new imaging system could use opaque walls, doors or floors as 'mirrors' to gather information about scenes outside its line of sight."

The system exploits a device called a femtosecond laser, which emits bursts of light so short that their duration is measured in quadrillionths of a second.

LG Plastic E-Paper Display To "Revolutionise E-Books"

LG Display announced plans to begin manufacturing flexible electronic paper displays that promises to "revolutionise the e-book market." The company announced a 6-inch e-ink plastic electronic paper display (EPD) that sports a 1024x768 resolution.

The world's first plastic EPD from LG offers users a paper-like reading experience with a plastic substrate that is as slim as cell phone protection film, and a flexible design that allows bending at a range of 40 degrees from the centre of the screen.

Flying Cars Coming "Next Year"

Fed up of traffic and congested roads, then flying cars would be the only solution to your problem. If US-based Terrafugia goes as per its plans, then flying-car-cum-plane will be commercially available "within a year."

"The 'Transition Street-Legal Airplane' is now a significant step closer to being a commercial reality," Terrafugia said.

Terrafugia's "Transition" carplane prototype has completed its successful first flight at Plattsburgh International Airport, New York. It has also successfully conducted initial drive and conversion testing.

Google 'Project Glass' Looks Cool...But Is It Possible?

Google unveils, through a concept video, how its futuristic display glasses are going to be like from the wearer's perspective.

The search engine giant unveils 'Project Glass' on its social network, Google Plus, showing off pictures and even a concept video of the augmented reality eye-wear that could eventually create a digital overlay on top of people's visual reality.

The concept is for the glasses to give wearers a smart-phone like experience without a smartphone. Looking like a 3-D glass, Google glass will be able to display video chats, maps, and more.

Imagine...Your Mobile Phone Seeing Through Walls

An imager chip can turn your mobile phones into devices that can see through walls, wood, plastics, paper and so on...? This is now possible, say researchers from University of Texas at Dallas.

Researchers have found a way to make the terahertz band of the electromagnetic spectrum—one of the wavelength ranges that falls between microwave and infrared—for consumer use and medical applications.

Moschip Launches New System

MosChip Semiconductor Technology, a design service and fabless semiconductor company, has unveiled a new system that integrates television with PC.

The multi-function PC Virtualisation System (PCVS) links the television with the PC, enabling users to exercise variety of options, including video solutions for independent display. The PCVS facilitates video-streaming and gaming as also virtual functioning of multi-purpose home networking for small office home office (SOHO).

US Magnet From Russian Nanocomposites Goes Over 100 Tesla

A powerful magnet, created by US physicists in Los-Alamos, NM, using Russian nanocomposite materials, has reached magnet induction level of over 100 tesla, 2 million times higher than induction of the Earth magnet field, news agency RIA Novosti reports citing the Kurchatovsky Science and Research Institute.

A group of scientists, headed by Chuck Mielke in the Los-Alamos National Lab, created a magnet from seven coils weighing about eight tons and consuming about 330 kW-hours of energy. The magnet performed an impulse of 100.75 tesla. The Earth magnetic field's power is estimated at 0.03-0.06 millitesla.

Cisco Reinforces Commitment To Russian Innovation

Cisco yesterday announced the signing of a strategy document outlining its Research and Development plans with the Skolkovo Foundation. This marks an important milestone in Cisco's multi-year, $1bn investment in sustainable innovation within the Russian Federation. The plan sets the way for the company to create a physical R&D presence in the Skolkovo Technopolis, and was announced at the Global Technology Symposium, in Menlo Park, California.

The strategy reinforces Cisco's investment in the Skolkovo Project, an initiative supported by President Medvedev to create a technology and innovation hub on the outskirts of Moscow. Cisco recently received formal Skolkovo participant status, which enables the company to begin engineering activities and formally establish a physical presence.

MTS Partners With Samsung In Mobile Retail

East-West Digital News, an international resource on Russian IT and innovation, reported earlier today that MTS, one of Russia's largest mobile operators, and Samsung Electronics have shaken hands on a deal to develop retail sales jointly in Russia by the end of the year.

The agreement – the first of its kind in Russia with a single manufacturer – calls for the opening of Samsung product stores in Russia's ten largest cities and aggressive promotion of the Korean brand in 2,000 out of the operator's 4,150 existing outlets across the country.

TeliaSonera Says It's Participating in Talks on MegaFon

TeliaSonera AB (TLSN), Sweden's biggest phone company, said it's negotiating with investment partners Altimo and AF Telecom on the future of OAO MegaFon (MFON), Russia's second-largest mobile operator.

"The three main shareholders are in talks since about three months back regarding the ownership structure and future governance of MegaFon," Cecilia Edstroem, a spokeswoman at Stockholm-based TeliaSonera, said in a phone interview, declining to elaborate further on a statement today that the discussions are taking place. Altimo Vice President Evgeny Dumalkin also verified the talks during a phone interview.

Usmanov To Control Russia's Megafon

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Peace has broken out in one of Russia's longest-running corporate battles, with the oligarch Alisher Usmanov set to take over the country's second-biggest mobile operator.

Mr Usmanov, a Kremlin-friendly tycoon and shareholder in Arsenal Football Club, is raising his stake in Megafon from 26 to 50 per cent plus one share in a deal likely to pave the wave for a London listing.

Mobile Penetration Rate Over 150% In Russia, Market Close To Saturation

East-West Digital News, an international resource on Russian IT and innovation, reported earlier this week that for the first time ever, all three major Russian mobile operators lost subscribers in early 2012, according to a report from AC&M Consulting, a Russian management consulting and research agency specializing in telecommunications and media.

VimpelCom, MTS and Megafon saw their active subscriber bases – defined on a six- or three-month basis – shrink by 1.6 million, 579,000, and 1,500 people respectively.

Russian Innovators To Meet Finnish Investors

Finland will host the so-called MoneyTalks events for Russian innovators to present their ideas to Finnish investors, venture capitalists and business-angels, newspaper Delovoy Peterburg reports.

The events will take place on May 15 in Espoo and June 14 in Lappeenranta. As of today 37 companies, including six Skolkovo residents, have submitted their applications, and eight participants have been selected.

This is not the first contest, organized by Finnish party for Russian innovators. Two years ago the Ministry of Economy and Employment of Finland launched the project "Commercialization of Russian Innovations" that observed 400 projects, out of which 80 entered the negotiations stage. Six Russian companies that participated in the program have opened their offices in Finland. Direct investment into projects totaled between 20,000 to 30,000 Euros ($25,000-$40,000), and annual turnover reached between 60,000 to 180,000 Euros ($80,000-$230,000). Period between the first meeting with investors and entering international markets averaged 1.5-2 years.

World Economic Round Up

Growth in emerging economies is slowing and the recovery in the United States could be losing some momentum. These are worrying developments when European leaders are still trying to complete repairs required to shore up the monetary union. Growth has ground to a halt in France and damage has spilled into the emerging economies of Eastern Europe, whose export industries are closely tied to euro zone markets. Eastern European banks, many of which are owned by Western European institutions, are also cutting back sharply on credit supply which is deepening the regions woes. China, the world's second largest economy, is also feeling the pain. Their exports to the European Union, China's largest market, shrank by over 1 percent in the first quarter. Brazil, which has been one of the world's fastest growing economies, is also facing a sharp slowdown.

The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our Semiconductor Monthly Report.

Industry Events 2012

Future Horizons Events

- Industry Forecast Briefing, London – 12th July

To book your place on any of our events please contact us on:

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

Industry Events

MARK YOUR CALENDER FOR 2012MT ANNUAL SEMICONDUCTOR INDUSTRY FORECAST SEMINAR

12th July

Harrington Hall Hotel, London, SW7

AND

21ST INTERNATIONAL ELECTRONICS FORUM

Marriott Hotel, Yerevan, Armenia

3rd – 5th October 2012

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