FutureHorizons

The Global Semiconductor Industry Analysts

Future Horizons Newsletter

July & August 2012

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Tech Floods Into Malaysia

PENANG, Malaysia—At first glance, this lush island looks like any other Southeast Asian vacation spot. Visitors flying in catch sight of sandy atolls before skimming past palm-shaded beaches and fishing boats bobbing in turquoise waters.

Last year's natural disasters in Japan and Thailand caused a global breakdown in the technology supply chain. This has many companies looking elsewhere to manufacture everything from car parts to hard-disk drives. The WSJ's Patrick Barta explains.

.Then Penang's true nature reveals itself. Hangar after hangar at the bustling airport is decked out in the liveries of shipping companies DHL International GmbH, United Parcel Service Inc. UPS +1.51%and FedEx Corp., FDX +2.64%each dedicated to flying out boxes of LED displays, chip sets and other sophisticated electronics.

Europe at a 'Crossroads' in Chip Production

The European semiconductor market is going through a major transition that could result in a drastically reduced role for the continent's leading manufacturers. This would negatively affect the region's economy growth unless steps are taken to enhance productivity and increase investments in next-generation technologies.

A 14-month research study conducted jointly by French economic and market consulting firm Decision Etudes Conseil and UK-based semiconductor research firm Future Horizons said "Europe will lose advanced and competitive semiconductor manufacturing infrastructure without a European long-term industrial vision guiding and enabling the coordination of all stakeholders."

Analog Devices And Tsmc Collaborate On New Analog Process Technology Platform

Norwood, MA and Hsinchu, Taiwan, R.O.C.- Analog Devices, Inc. (NASDAQ: ADI) and TSMC (TWSE: 2330, NYSE: TSM) today announced a collaboratively developed analog process technology platform for precision analog integrated circuits (ICs).

The new process technology platform significantly improves analog performance for a number of devices, including A/D and D/A converters, power management devices, and audio coders/decoders that are widely used in consumer, communication, computer, industrial, and automotive applications. Performance enhancements achieved with the 0.18 micron, 5-volt process include an order of magnitude noise improvement, a 70 percent lower standby leakage current, a 50 percent improvement in linearity and a 50 percent better capacitor and resistor matching.

Chip Giants Unite To Form HSA Foundation

AMD, ARM, Imagination, Texas Instruments and MediaTek have announced the formation of the Heterogeneous System Architecture (HSA) Foundation.

As a non-profit consortium, the HSA Foundation has been established to define and promote an open, standards-based approach to heterogeneous computing that will provide a common hardware specification and support to make it easier for software developers to take multi-processing advantage of modern complex processors.

ARM Expects First Chips Made Using 20nm Process Late Next Year.

It is not a secret that both leading contract makers of semiconductors - Globalfoundries and Taiwan Semiconductor Manufacturing Company - plan to start production of chips using 20nm process sometimes in the second half of next year. Apparently, ARM, the developer of low-power microprocessor technologies, expects actual devices based on 20nm chips to arrive by late 2013.

ARM-based chips made using next-generation 20nm manufacturing process could appear in smartphones and tablets by as soon as the end of next year, Simon Segars, general manager of the processor and physical IP divisions at ARM, told reporters at the Computex 2012 tradeshow in Taipei, Taiwan on Monday, reports IDG News Service.

ARM Chases Intel On 3D Transistors With TSMC Deal

ARM is catching up with Intel on 3D transistors, announcing a new partnership with Taiwan Semiconductor Manufacturing to manufacture 64-bit chips that are faster and more power-efficient than current chips in which transistors are organized horizontally.

The agreement calls for TSMC to implement the 3D transistors in chips based on ARM's ARMv8 64-bit architecture in the 20-nanometer manufacturing process and beyond. ARM licenses processor designs to fabless companies such as Qualcomm and Nvidia, which get the chips made by contract manufacturers like TSMC.

CSR Buys Trident's Audio Processor Line

SAN FRANCISCO—Wireless and audio chip vendor CSR plc said Wednesday it acquired the Map-X audio product line from bankrupt U.S. chip vendor Trident Microsystems Inc.

CSR (London) did not disclose the purchase price. The company said the acquisition would allow it to build on its existing audio platform, enabling customers to more easily develop high performance home audio consumer electronics products.

Filtronic Returns To Profit On 4G Demand

Filtronic, the wireless telecoms equipment maker, has returned to profit on the back of demand for equipment to support next generation 4G mobile services.

This move to superfast mobile data technology has required significant network investment by operators – which has boosted Filtronic’s wireless and broadband businesses.

Fujitsu, NEC, Docomo Launch Smartphone Chipmaker

Reuters) - Fujitsu Ltd, NTT Docomo Inc and NEC Corp launched a new company on Wednesday to manufacture smartphone chips as Japanese firms attempt to cut their reliance on foreign-made mobile chips.

The venture pits the Japanese companies against Qualcomm Inc, the world's largest mobile chip manufacturer and leading supplier of core microchips used in fast-selling smartphones and tablets.

Fujitsu will own 52.8 percent of Access Network Technology Ltd, which it previously planned to set up on its own.

Globalfoundries Looking To Beat UMC In 2012, Eyeing Top Spot Among Foundries

Globalfoundries is set to unseat United Microelectronics (UMC) as the world's second-largest pure-play semiconductor foundry in 2012, and aims for global leadership position among contract chipmakers, according to the US firm.

Taiwan Semiconductor Manufacturing (TSMC) and UMC have long dominated the pure-play market and the industry as a whole. Nonetheless, Globalfoundries believes that worldwide foundry market share for the next three to five years will see a major change take place among top suppliers.

Fabless and IDM companies used to have limited foundry choices when it comes to advanced process technology, which resulted in TSMC's dominant market position, commented Subramani Kengeri, VP of Design Solutions at Globalfoundries. However, Globalfoundries' entry with its advanced process technology will enable them to diversify suppliers, Kengeri stated.

GlobalFoundriesTo Provide ST With 28nm & 20nm SOI Devices

GLOBALFOUNDRIES is to manufacture devices for STMicroelectronics using ST’s proprietary Fully Depleted Silicon-on-Insulator (FD-SOI) technology in both the 28nm and 20nm nodes.

The high-volume and timely availability of ST’s FD-SOI devices is essential in quenching the market’s appetite for smart phones and tablets that can handle all their stunning graphics, multimedia and high-speed broadband connectivity without sacrificing battery life.

Imec And Panasonic Extend Strategic Research Collaboration

imec and Panasonic Inc. have entered into the next phase of a comprehensive and broadened collaboration agreement for joint R&D on healthcare, wireless communication, flexible electronics and advanced CMOS process technologies.

Share on linkedinShare on printShare on emailMore Sharing ServicesJune 15 2012, 7:00 AM Panasonic has been a core partner in imec's research platform on advanced semiconductor process technologies since 2004. This collaboration has been fundamentally broadened in 2008, expanding the collaboration scope from advanced semiconductor process technology to also include various application areas of semiconductors.

Infineon Supplies Security Chips For New Identity Cards In Malaysia

Neubiberg, Germany – Infineon Technologies (FSE: IFX / OTCQX: IFNNY) announced today it is supplying the security chips for Malaysia's new national electronic identity cards. Popularly known as 'MyKad', the new generation smart card features Infineon`s SLE 78 security controller with Infineon's award-winning 'Integrity Guard' security technology. Malaysia takes advantage of this new security technology combined with SOLID FLASH™ for fast deployment capability.

MyKad is a multi-application national electronic identity card, including biometric identification, which will allow the implementation of numerous additional functions such as Driving License, Health, ATM, eSignature and eGovernment services. In the past years, Malaysia issued approximately two million new identity cards each year. Identity cards are used for many years and are subject to intense wear. This is why they must meet specific high requirements. In particular, the bearer's personal data should be secured during the entire life of the card.

Intel Upgrades 3G RF Chip With Power Amplifiers

LONDON – Intel Corp. (Santa Clara, Calif.) has announced the integration of a 3G HSPA radio frequency transceiver with power amplifiers on a single 65-nm die.

The chip is designed in a standard 65-nm foundry process as offered by GlobalFoundries, Taiwan Semiconductor Manufacturing Co. Ltd. and United Microelectronics Corp., said Stefan Wolff, vice president of the Intel Architecture Group, in email correspondence with EE Times.

As Rivals Outsource, Lenovo Keeps Production In-House .

BEIJING—In a modest factory on the outskirts of China's capital, electronics maker Lenovo Group Ltd. 0992.HK +0.51%displays its unusual approach toward capturing the top spot in the global computer market.

The factory, which assembles desktop computers and servers, resembles thousands of others across China. Robotic arms are in constant motion, moving parts and pieces around. Rows of workers clad in blue pop parts into place as computers make their way down the line. The factory can churn out about 25,000 machines in a day.

Mediatek To Buy Chip Design Rival Mstar For $3.8 Billion

MediaTek Inc. (2454) agreed to buy MStar Semiconductor Inc. (3697) in a stock and cash deal that values the smaller rival at $3.8 billion, and end competition between the two Taiwanese designers of chips used in televisions and phones.

MediaTek plans to acquire up to 48 percent of MStar in a tender offer before a full merger expected to close early next year, the two Hsinchu, Taiwan-based companies said in a statement today. MStar shareholders would get 0.794 of a new MediaTek share plus NT$1 ($0.03) in cash for each stock held, a 20 percent premium to today's closing price, they said.

Micron To Acquire Japanese Rival Elpida

Micron Technology Inc. MU +3.80%agreed to acquire troubled Japanese rival Elpida Memory Inc. for about $2.5 billion, as the U.S. memory maker bulks up to compete against rivals in South Korea and Taiwan.

The deal would make Micron No. 2 in the market for memory chips, second only to Samsung Electronics Co. Micron, based in Boise, Idaho, currently ranks third, behind SK Hynix Inc., another Korean company that until earlier this year was called Hynix Semiconductor Inc.

Micron's Purchase Of Elpida Seen As Positive For Chip Industry

Micron Technology Inc.'s MU +5.19% acquisition of Elpida Memory Inc. is good news for other major suppliers of computer memory chips in Asia, as industry consolidation will likely help ease the oversupply problem that has been plaguing the market for years.

When Micron takes over the failed Japanese rival and streamlines its operations, the whole industry could benefit from more subdued supply and higher prices of dynamic random access memory, or DRAM, chips, analysts said.

Microsoft Unveils Surface Tablet

Software giant Microsoft finally showcases its prowess in hardware by launching its very own tablet PC. Microsoft has unveiled a new tablet computer, Surface, to compete with rival company Apple.

The company said two models of Surface will be available: one running an ARM processor featuring Windows RT, and one with a third-generation Intel Core processor featuring Windows 8 Pro.

Renesas Says To Tie Up With TSMC In Microchip Business

Japanese chipmaker Renesas Electronics Corp said on Thursday that it plans to tie up with Taiwan Semiconductor Manufacturing Co in the microchip business.

The confirmation came after a Yomiuri Shimbun report that the chipmaker would likely outsource some microchip production to TSMC, the world's biggest contract chip maker, under a tie-up.

Renesas is scheduled to hold a news conference on Monday to talk about a tie-up with TSMC.

Samsung To Invest $1.9 Bln In New Semiconductor Line

SEOUL — Samsung Electronics, the world's largest memory chip maker, said Thursday it would invest about $1.9 billion in building a new non-memory chip line to address booming demand for mobile processors.

The company said its new 2.25 trillion won line, to be built by the end of next year in Hwaseong south of Seoul, would mainly produce advanced mobile application processors.

It will help meet the expanding demand for smart mobile solutions, Samsung said in a statement.

Samsung To Buy Part Of British Electronics Firm

SEOUL: South Korea's Samsung Electronics said Tuesday it had signed a deal to buy a mobile technology unit belonging to British firm Cambridge Silicon Radio (CSR) in a bid to improve its handheld devices.

Under the deal signed Monday, Samsung will buy CSR's facility which develops mobile connectivity and location technologies -- used in devices such as smartphones and tablet PCs -- by the end of this year, for $310 million.

Sony To Spend $1-Billion On CMOS Sensor Production

LONDON – Sony Corp. (Tokyo, Japan) has announced that it plans to spend about 80 billion yen (about $1 billion) by September 2013 to expand its manufacturing capacity for stacked CMOS image sensors.

The investment in Sony Semiconductor's Nagasaki wafer fab, includes 45 billion yen already assigned to capex in the current financial year that ends on March 31, 2013, will increase Sony's production capacity for image sensors to 60,000 wafers per month.

Sony, Panasonic Team-Up On Next-Generation Tvs

Struggling Japanese electronics giants Sony and Panasonic said on Monday they would team up to develop televisions with advanced technology, in a bid to claw back market share from overseas rivals.

Despite a long-standing rivalry, the firms said they would aim to establish mass-production technology for organic light-emitting diode (OLED) television panels next year, as they try to recover from multi-billion-dollar losses.

The technology lets producers make TVs that consume less power while offering a sharper picture than conventional flat panels, and is expected to be one of the dominant technologies in next-generation televisions.

However, the industry has struggled to find an economical way to develop larger screens equipped with the technology.

STMicro Launches Ultra-Compact MEMS Compass

Semiconductor vendor STMicroelectronics announced last week the availability of a new ultra-compact digital compass module (LSM303D) said to be 60 percent smaller than current similar MEMS in production today.

“The LSM303D module provides extremely accurate output across full-scale ranges up to ±16g (linear acceleration) and ±12 Gauss (magnetic field),“ wrote STMicro in its press release. The device embeds a temperature sensor and a programmable FIFO (first-in first-out) memory block for advanced motion recognition and smart power management.

Tensilica Joins Wi-Fi Alliance to Provide Wireless Multi-Standard Modem Solutions

SANTA CLARA, Calif., USA - July 30, 2012 - Tensilica, Inc. today announced that it has joined the Wi-Fi Alliance, an industry consortium dedicated to driving adoption of Wi-Fi and device interoperability. Tensilica, already a leading IP supplier of multi-standard 3G/ LTE and LTE-Advanced modem cores and applications software, also has leading customers using the Tensilica dataplane processors (DPUs) for some of the older Wi-Fi standards. Now Tensilica plans to integrate Wi-Fi with its multi-standard radio capabilities. Several of Tensilica's DPUs are ideal for Wi-Fi, including the popular ConnX D2 and the BBE DSP (digital signal processor) product family.

Toshiba Develops Litho Probe For 11nm Masks

Toshiba Corporation has developed an anti-wear nano-lithographic probe in collaboration with Tokyo University and BEANS laboratory. The probe is designed for making and repairing masks for next generation semiconductor production at 16- to 11nm. The prototype probe demonstrates hundreds of times the durability of conventional probes.

Photolithography for semiconductor fabrication needs expensive masks to transcribe nano-patterns. Their resolution is limited to several tens of nano-meters due to optical diffraction.

Toshiba Cuts Flash-Memory Output .

Toshiba Corp. 6588.TO +1.76%is cutting its production of flash-memory chips for the first time in more than three years, as the Japanese electronics maker copes with excessive inventory after seeing weaker-than-expected demand for such chips used to store data in various mobile gadgets.

The decision by Toshiba, one of the world's two giant suppliers of NAND flash-memory chips along with Samsung Electronics Co. 005930.SE +5.20%of South Korea, follows steep declines in the prices of NAND chips, particularly those used in USB memory sticks and memory cards for digital cameras.

TSMC To Build 450mm Fab

TSMC is to spend between $8bn and $10bn on a 450mm fab in Taiwan, says Reuters.

According to the Taiwan Council for Economic Planning and Development, TSMC will build the plant in 'early 2014' and expects $6.67bn sales from it in 2019.

The fab will be built in the central part of the island. TSMC's current fabs are either in the Northern part of the island in Hsinchu or the Southern part in Tainan.

TSMC has always proposed a very aggressive schedule for 450mm deployment.

It has said it will have its first 450mm pilot line in 2013-14, and its first 450mm production fab in 2015-16.

UMC Plans To Invest US$8 Bln In 4th 12-Inch Plant

TAIPEI (Dow Jones)--United Microelectronics Corp. (UMC) said Thursday it plans to invest US$8 billion over the next few years to expand its advanced chip plant in southern Taiwan to meet long-term demand.

The contract chip maker said it will build another 12-inch wafer plant in Tainan, southern Taiwan, adding to the two such plants it already has in the area. UMC also has a 12-inch wafer plant in Singapore.

The new plant will produce chips using advanced 28-nanometer and 20-nanometer technology processes, the company said.

It will start operations in the second half of 2013 and have a monthly capacity of 50,000 12-inch wafers, the company said.

Goodbye Silicon Chips - And Hello Grapheme

The West may be about to lose its technology lead over Asia as it lags in the race to use a "miracle" material called graphene.

Reputed to be 200 times stronger than structural steel, graphene is tipped as the replacement for the silicon chips that power today's information technology. According to a Wikipedia description citing research reports, graphene is a one-atom thick sheet of carbon atoms densely packed in a honeycomb crystal lattice resembling chicken wire.

Marvell Unleashes 802.11ac Combo Chip

SAN FRANCISCO--At Computex this week, Marvell Technology Group Ltd. announced its version of an 802.11ac combination radio chip with both near field communications (NFC) and Bluetooth 4.0.

The Avastar 88W8897 is described as a 2x2 combination radio chip which also sports mobile multiple input multiple output (MIMO), transmit beamforming and support for the Wi-Fi CERTIFIED Miracast audio and video streaming technology(once it becomes available).

Microsoft Unveils Surface Tablet To Rival iPad .

HOLLYWOOD, Calif.—Microsoft Corp. on Monday unveiled the first computer it has ever made, a tablet called the Surface that comes with a keyboard and other features designed to stand out in a market dominated by Apple Inc.

Microsoft's Executive Officer Steve Ballmer introduces the Surface tablet during the press conference in Milky Studios on June 18.

..The new device, unveiled by Microsoft Chief Executive Steve Ballmer at an event for journalists here, is a sign of the new tactics the software giant has been forced to embrace as it tries to make up lost ground in the mobile market.

.Microsoft said the smallest Surface tablet is 9.3 millimeters thick and weighs 1.5 pounds, which is similar to Apple's iPad, at 9.4 millimeters thick and 1.44 pounds. The Surface has a 10.6-inch screen compared with the iPad's 9.7-inch screen.

Next Cameras Come Into View

Scientists at Duke University have built an experimental camera that allows the user—after a photo is taken—to zoom in on portions of the image in extraordinary detail, a development that could fundamentally alter the way images are captured and viewed.

The new camera collects more than 30 times as much picture data as today's best consumer digital devices. While existing cameras can take photographs that have pixel counts in the tens of millions, the Duke device produces a still or video image with a billion pixels—five times as much detail as can be seen by a person with 20/20 vision.

The Battle For China's Low-End Smartphone Market .

SHANGHAI—While Apple Inc. AAPL +0.76%and Samsung Electronics Co. 005930.SE -3.67%take each other on in the lucrative high-end smartphone market, there is another battle taking place in the less glamorous world of inexpensive smartphones in China.

With a larger portion of China's one billion mobile phone users replacing their basic cellphones, the market is exploding for smartphones that cost about 1,000 yuan (US$157) or less. Major local players like Huawei Technologies Co. and ZTE Corp. 000063.SZ -3.41%are leaders in that segment, where foreign players like Samsung and Nokia Corp. NOK 0.00%also compete.

Aakash-2 Launched

After witnessing many ups and downs, the improved version of the world's cheapest tablet "Aakash-2" was finally launched on Monday at IIT-Bombay.

Aakash-2 comes with a faster processor at 800MHz and a capacitive touchscreen. The battery power has also been increased from less than 2 hours to 3 hours. The new version of the tablet comes at a price point of Rs. 2,263.

"Three months ago, the Aakash project was transferred to IIT-Bombay. The specifications are upgraded while maintaining its low cost. In those three months, there has been a sea change in our confidence in the project and today we are going to symbolically launch the low-cost Aakash device. Aakash is no longer just a device that only consumes content. Through the efforts of IIT-Bombay, it will be a device that creates content," said HRD minister Kapil Sibal via video conferencing.

Mediatek To Bring Premier Smartphone Features To $150 - $200 Handsets

PARIS – Gunning for a growing market in mid- and entry-level smartphones, MediaTek Inc. (Hsinchu, Taiwan) is rolling out today a new dual-core mobile phone platform, dubbed MT6577, offering advanced multimedia features similar to those available on high-end smartphones such as Apple’s iPhones 4S.

The new platform, which combines a dual 1GHz Cortex-A9 application processor from ARM with MediaTek’s proven 3G/HSPA modem, features a PowerVR Series5 SGX graphics processing unit from Imagination Technologies, and runs the latest Android 4.0 “Ice Cream Sandwich” operating system.

World's Thinnest Display Made From A 'Soap Bubble'

A team, including scientists at the University of Tokyo, Carnegie Mellon University and the University of Tsukuba, have developed world's thinnest screen from soap bubble.

The screen, which is actually one huge soap bubble, can display images that are either flat, textured or 3D.

"It is common knowledge that the surface of soap bubble is a micro membrane. It allows light to pass through and displays the colour on its structure," Yoichi Ochiai from the University of Tokyo, wrote in his blog.

Single Innovation Project Database To Be Set Up In Russia

Russian Venture Company (RVC), state-run Vnesheconombank (VEB), Fund of Infrastructure and Educational Programs RUSNANO, and International Bank for Reconstruction and Development (IBRD) have signed a memorandum of understanding to join efforts in a project to create Russian regions' innovation projects management systems, news agency RIA Novosti reports.

GTI Labs Accelerator For IT Start-Ups Launched

According to Venture Business News, Global TechInnovations and investment fund Prostor Capital are launching GTI Labs, a new acceleration program for IT start-ups.

GTI Labs is a sort of "investment lift", in which a venture investor's representatives are included in the project selection process. The fund will assess KPIs of selected teams from the very beginning and throughout the program. Start-ups will thus be able to receive up to $40,000 seed investment, as well as up to $400,000 further funding after a three-month acceleration program.

St. Petersburg Scientist Develops Fabric With In-Sewn Data

A St. Petersburg scientist, Nikolay Safyannikov, has invented a unique fabric that can contain any in-sewn information, InterNovosti reports citing the developer.

"The material carries additional information similar to a bar code. But unlike a bar code that has lines, this fabric has thread intercrossings that form numbers," explained Mr. Safyannikov. Data content in the fabric can reportedly be changed as in a computer program.

According to the "smart" fabric inventor, the innovation can be of use in various sectors. "I believe in the future, all clothing will be coded. We will then have a clothing database. As a result, people will be identified in any situation. This will also provide protection against fakes and intellectual property protection, especially for haute couture designers who are so wary of copycats," he went on. To date, the military have expressed interest in the new concept.

IBM And Russian Innovators To Develop Microelectronics

IBM corporation has signed a cooperation agreement with five largest Russian innovation companies and development institutes – RUSNANO, Skolkovo Foundation, Rostelecom, RVC, ITFY – on development of Russian microelectronics, portal of Russian Nanotechnological Society Rusnor.RU reports.

Under the agreement, the parties will set up a Center of Electronic Technologies (CET) for development and commercialization of applied microelectronics. IBM will reportedly provide cloud computing technologies to create a new virtual project environment t for making microchips, sensors and other products, used in infrastructure projects, industrial and consumer electronics. Cloud computing will unite distributed teams of developers

and provide access to advanced technologies and achievements within the industry in order to create competitive Russia-made products.

Russia Moves To Diversify Economy With Technology Projects

Twenty miles west of Moscow, a new technology race, rather like the space race of the 1960s, is opening up.

In the area of farmland, Russia is trying to build its own version of Silicon Valley - the Skolkovo Innovation Centre.

It is part of the government initiative to divert the country away from its economic dependence on oil and gas and towards a new kind of industry.

It has been a key policy for Dmitry Medvedev, the man who was Russia's president until he was replaced by Vladimir Putin at the beginning of May 2012.

World Economic Round Up

The growth rate of the global economy is experiencing its weakest patch since the upswing in the cycle began in 2009 with only Brazil expected to experience a pickup. It was never seen of much of an upswing given the depth of the recession following the financial crisis at the end of 2008, but the big picture did seem to suggest that global Gross Domestic Profit (GDP) was slowly on the mend even if it wasn't at a rate which would reduce global unemployment very quickly. Now even a modest recovery appears to be at risk. Monetary easing from the ECB and the Bank of England followed earlier action by the Federal Reserve (Fed). Brazil, Russia, India and China, know as BRICs, will comprise 20 percent of the world economy in 2012 after growing more than four-fold in the past decade.

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

- Silicon Chip Industry Training Seminar – London – 10th September

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

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AND
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Sheraton Hotel, Bratislava
3rd – 5th October 2012

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