

The Wireless Innovation Forum Announces Annual Award Finalists

WASHINGTON -- (BUSINESS WIRE) -- The Wireless Innovation Forum has announced finalists of their annual Achievement Awards. Finalists in the Technology of the Year include Ettus Research and Sandbridge Technologies. Finalists for International Achievement are Communication Research Centre Canada, John Glossner of Optimum Semiconductor Technologies and Marc McHenry of Shared Spectrum Company.

Winners will be announced at SDR'10 Technical Conference and Product Exposition, the premier event for the reconfigurable radio community, to be held from November 30 to December 3 in Washington, D.C.

The Technology of the Year award is presented to an individual or organization for a breakthrough product or technology in the field of Software Defined or Cognitive Radio as selected by the members. Nomination summaries for the finalists are:

The USRP Product Family by Ettus Research:

The Universal Software Radio Peripheral product family has been the most important enabling technology in the field of software defined and cognitive radio research for the past 5 years. In producing and supporting a highly versatile, low-cost RF front end, Ettus Research has made the field accessible to a broad range of researchers, encouraging a new generation of radio experimenters and bridging the gap between the simulation environment and real-world demonstrations.

Today, the USRP family is used by researchers around the world in applications from handset tracking in shopping centers to genetic-algorithm-driven cognitive radios and fully functional GSM BTS deployments. Low cost, combined with an open source approach where everything including schematics, firmware, drivers and FPGA and daughterboard designs are available makes the USRP product family the most accessible RF front-end available for software-defined and cognitive radio research today.

Sandblaster SB3500 by Sandbridge Technologies:

The Sandbridge Sandblaster SB3500 is a single-chip capable of executing 4G multimode wireless systems at power levels appropriate for handset operation. At the heart of the chip are three multithreaded 16-wide vector DSP processors. A Load/Store architecture with a 32-bit non-aligned address space and special fixed point instructions provides an excellent compiler target.

Completely object code compatible with the Sandblaster 1.0 architecture, the 2.0 enhancements incorporated into the SB3500 include general support for error

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correction, encryption, and OFDM systems. The processors are connected to each other with a unidirectional deterministic and opportunistic ring. Generally, a programmer does not have to worry about programming effects because instructions are independent (e.g., no load/branch delay slots), threads are independent (except as programmed via synchronization primitives), and processor cores are independent.

Therefore, once a program starts executing it is known to be both interruptible and fully independent of what is executing in other parts of the system. The chip contains an onboard ARM capable of running modern handset user interfaces such as Android, Qt, and Linux. It also contains all the interfaces necessary for a typical smartphone including keyboard, mouse, camera, USB 2.0, LCD, SPI, and I2C. The DSP complex has its own set of peripherals for control of external transceivers including parallel to serial data ports, DigiRF, SPI, I2C, and GPIO. Data is transferred between the peripherals and processors via a split-transaction ARM AXI bus with bridges to the ring network, ARM AHB, and APB buses. The Sandblaster SB3500 chip was announced by Samsung in February 2008 and incorporated in the very first LTE phone trials.

Quoting Samsung's EVP Mr. ByungDuck Cho, Head of Telecom R&D, Digital Media & Communication Business, Samsung Electronics Co., Ltd. The flexibility of the Sandbridge SB3500 platform has been very helpful to Samsung, who said they are "excited at the opportunities that the reprogrammability of the SB3500 platform represents for revolutionizing terminal modem development."

mimoOn and CETECOM also announced the world's smallest Test-Mobile for LTE using the SB3500. The basic technology won a 2005 World Economic Forum award for "work [that] is fundamentally changing the way societies are developing, and the ways people live, work, and play," and was a finalist in the 2009 EE Times ACE Awards for best mobile platform. Optimum Semiconductor Technologies, Inc. has licensed the technology and is actively developing solutions targeted primarily for the China market. Two China-based companies have purchased devices for the deployment of proprietary WiMax and GPS systems. In addition to Samsung, mimoOn, and CETECOM, KDDI has publicly demonstrated WiMax running on the SB3500. An undisclosed company also developed the first TD-LTE femtostation using the SB3500 which was demonstrated at the Shanghai World's Fair. Recently it was announced that Sandbridge was acquired by a large public company. Quoting the announcement: "The company has announced significant achievements in recent years, notably the first public demonstration of LTE (the main 4G standard), on a smart phone in 2008. The company also won several advanced development engagements with handset manufacturers and has successfully licensed its technology to several US and Asian companies."

The Forum International Achievement Award is presented to an individual, group of individuals, or organization that made especially significant contributions to international furtherance or acceptance of Software Defined or Cognitive Radio. The 2010 finalists in this category are:

Communications Research Centre, Canada:

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From the very beginning of SDR, CRC has been at the forefront of developing SDR standards, proselytizing the benefits of SDR throughout the world, educating opinion-makers and developers throughout the world about SDR, and developing technologies that can be used by programs throughout the world. CRC has been making significant contributions to the SCA specification since the very beginning.

A.) CRC made the very first international change proposal to the JTRS program. This was significant in the early days since it demonstrated the SCA was interesting to more than just the US DoD.

B.) CRC has been credited for proposing the use of ports/connections and the OMGs CCM XML file format. CRC has submitted over 25 change proposals to the JTRS program, many of which have been included in the different releases. In 2000, CRC created one of the very first Core Framework implementations, that of SCAv0.3 which had not even been released publicly yet. This work was used by CRC to submit many crucial change proposals (e.g., ports/connections and XML file format).

In 2002, CRC was the first organization to be funded by the SDRF for technical work when it created the SCA Reference Implementation and released it open-source (SCARI-OPEN). In 2004, SCARI-Open went through JTAP testing and obtained an incredible success rate for testing and everything was accomplished in only 6 days which had never been done. The best test score in the shortest amount of time ever. The SCARI-Open has been downloaded several thousand times from worldwide organizations (educational, research centres, SDR consultants, and radio manufacturers).

SCARI-Open has contributed to the emancipation of the SCA inside and outside the US DOD market. In 2002, CRC made the first demonstration of an SCA commercial waveform at the SDR02. The waveform was a Digital Audio Broadcasting (DAB") receiver running in real-time on a 1 GHz laptop.

Year after year, CRC has traveled the globe to make technical presentations about the SCA.

a. CRC is a regular invited speaker at the IQPC's SDR Europe Conference, SMi's International Software Radio Conference, IDGA's Radio summit and the SDR Forum Technical Conference.

b. Kathey Bailey (US JPEO International Liaison officer) mentioned that CRC had done much of the marketing work outside the US, and everywhere she went, CRC had been there before her.

c. CRC has trained over 600 engineers in 16 countries on how to use the SCA to build radios. CRC has been the largest promoter of the SCA and the SDR Forum throughout the years. Several members of the SDRF have joined thanks to CRC. CRC has been involved with the SDRF/WInnF activities since 1999.

a. Joined the Forum in 1999. b. a member of the SDRF/WInnF board of Directors for

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several years (Claude Belisle). CRC has also been involved at the technical level within the SDR Forum.

c. Claude Belisle has chaired the Technical Committee and various work groups.

d. Steve Bernier has chaired and co-chaired SCA related work groups as well as being a major contributor to different technical work groups.

e. Has attended the vast majority of the working sessions. CRC has the largest team dedicated to SDR/SCA and that allows CRC to make significant contributions year round.

In short, CRC has been one of the industry's most prominent supporters of SDR/SCA for the last 10 years.

John Glossner of Optimum Semiconductor:

Dr. John Glossner co-founded Sandbridge nearly 10 years ago with the vision to bring SDR technology to multimode commercial handset devices. His company developed a multicore multithreaded vector processor technology based on his Ph.D. thesis with a unique capability of fast software development using an internally built compiler technology. Dr. Glossner received a World Economic Forum Technology Pioneer award in 2005 for the base technology for "work [that] is fundamentally changing the way societies are developing, and the ways people live, work, and play."

Dr. Glossner has also been a finalist in the Ernst & Young entrepreneur of the year. He was also profiled in an article in Entrepreneur magazine. The Sandbridge developed Sandblaster SB3500 chip was announced by Samsung in February 2008 and incorporated in the very first LTE phone trials.

Quoting Samsung's EVP Mr. ByungDuck Cho, head of Telecom R&D, Digital Media & Communication Business, Samsung Electronics Co., Ltd. "The flexibility of the Sandbridge SB3500 platform has been very helpful to Samsung. Samsung is excited at the opportunities that the reprogrammability of the SB3500 platform represents for revolutionizing terminal modem development."

mimoOn and CETECOM also announced the world's smallest Test-Mobile for LTE using the SB3500. This chip was also a finalist in the 2009 EE Times ACE Awards for best mobile platform. Recently it was announced that the SB3500 technology was first licensed by Optimum Semiconductor Technologies, Inc. and then subsequently Sandbridge was acquired by a large public company.

Quoting the announcement: "The company has announced significant achievements in recent years, notably the first public demonstration of LTE (the main 4G standard), on a smart phone in 2008. The company also won several advanced development engagements with handset manufacturers and has successfully licensed its technology to several US and Asian companies. Added Sandbridge CEO Paul Vroomen: "We are very pleased with this outcome, which reflects the

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tremendous innovation, hard work and dedication of our team."

Dr. Glossner is a member of the Board of Directors of Optimum Semiconductor Technologies and the Wireless Innovation Forum. He was previously on the Board of Sandbridge Technologies. He is currently an advisor to 4D Swing and Newlans. He is also the Chair of the Wireless Innovation Forum's Next Generation Networks Technical Committee and the Chair of the Commercial Baseband Processing Technology Working Group. He also is the General Chair of the Wireless Innovation Forum's Software Defined Radio conference. Dr. Glossner is currently the CEO of Optimum Semiconductor Technologies, Inc.

Previously he was CTO & EVP of Sandbridge Technologies. Prior to Sandbridge he worked for IBM Microelectronics, IBM Research, Lucent Microelectronics (Agere) and Starcore.

Mark McHenry of Shared Spectrum Company:

Dr. Mark McHenry is a pioneer in the development of cognitive radio and spectrum management technologies. Ten years ago, he founded Shared Spectrum Company (SSC) with the goal of developing a technology that would enable multiple networks and applications to dynamically share a single RF spectrum band. In 2000, Mark became the first person to file comments at the Federal Communications Commission (FCC) proposing the shared use of "white spaces" in the television band for broadband Internet access.

His company went on to pioneer the research and development of dynamic spectrum access (DSA) technology for the United States (US) Department of Defense. Mark is frequently sought out by US and international companies, regulatory bodies, governments, and standards organizations for his distinctive expertise, especially in the areas of RF spectrum, cognitive radio, and signal estimation and detection.

His spectrum occupancy measurements are among the most referenced in academia, industry and government publications around the world. Most importantly, Mark and his company have been a key force in the dramatic increase in awareness and acceptance of the major role that spectrum sharing technologies can play in addressing the emerging spectrum crisis in the US and abroad.

In 2006, Mark was appointed by the Secretary of Commerce to serve on the Department of Commerce Spectrum Advisory Committee. That same year, he was also named the Engineer of the Year by the D.C. Area Council of Engineering and Architectural Studies. In 2005, Mark gathered with a handful of other cognitive radio pioneers at the first DySPAN conference in Dublin, Ireland, where he won the best demonstration award for SSC's DSA technology.

In 2000, Mark received the Office of the Secretary of Defense (OSD) Award for Exceptional Public Service, and in 1997 he received the OSD award for Outstanding Achievement. Mark has more than 25 years of experience in communications system design and is considered a leading authority in cognitive radio technology

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and RF spectrum issues. Mark was a co-founder and CTO of San Diego Research Center, Inc., a wireless research and development company that was sold to Argon ST. Prior to that, he was a program manager at the Defense Advanced Research Projects Agency (DARPA). He also has worked at SRI International, Northrop Advanced Systems, McDonnell Douglas Astronautics, Hughes Aircraft and Ford Aerospace.

Winners in each of these categories will be announced at the Welcome Reception held Tuesday, November 30 at SDR'10. To register to attend, please visit our registration page.

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