JOURNAL

Letter from the President

Since its inception almost nine years ago, EEMBC has undergone significant changes and experienced tremendous growth. In that time, EEMBC's benchmarks have become an internationally-recognized standard for measuring processor performance. Along with this recognition comes a responsibility to continually improve in the way we do business, develop new benchmarks, and interact with the entire embedded community.

This month our consortium is beginning a new chapter in its life with the establishment of an EEMBC Technology Center

that will assume overall responsibility for our benchmark software development, handling technical support issues, and certifying the benchmark scores our members report for their devices.

This milestone is significant in many ways. Most fundamentally, it reflects the growing interest among our members, both processor vendors and OEMs, in using EEMBC benchmarks as a tool to evaluate their next-generation products in the development stage. While comparisons of established devices using certified EEMBC scores will always be a

useful marketing tool for chip manufacturers, the industry has evolved to the point where benchmarks are no longer a wish-list item but a real necessity to speed time to market.

Processor applications and architectures too are evolving rapidly, and this is placing additional demands on EEMBC as an organization to provide technical leadership that goes beyond the framework of our original concept of a certifica-

Infineon's Patrick Leteinturier to Lead New Push on Automotive Benchmarks

Patrick Leteinturier, who represents Infineon Technologies on the EEMBC Board of Directors, has been elected as chair of the Consortium's automotive and industrial subcommittee. In this new role, Patrick will be leading the development of EEMBC's next-generation automotive benchmarks, with the goal of making them fully relevant to the advanced needs of today's automotive designers.

With 17 years of experience in automotive controls, Patrick holds several patents for powertrain architectures and serves as a consultant for

several automobile OEMs and system suppliers designing powertrain systems. At Infineon, he currently serves as automotive system senior principal. Before joining Infineon/Siemens-HL in 1997, Patrick managed powertrain development at SAGEM for seven years. His education includes engineering degrees from the Ecole Supérieure d'Electricité and the Ecole Nationale Supérieure des Arts & Métiers, and a diploma in internal combustion engines from the University of Paris VI.

"The simple microcontrollers formerly used in automobiles

are now being replaced by powerful number-crunchers whose performance can no longer be measured in MIPS," Patrick notes. "Instead, their effectiveness is based on a coherent partitioning between analog and digital, hardware and software, tools and methodology. I look forward to leading EEMBC's efforts to develop benchmarks that take every factor into consideration in creating an accurate measurement of a system's true performance."

NEWS BRIEFS

EEMBC gratefully acknowledges the generosity of **Green Hills Software** in once again hosting an EEMBC exhibit within the Green Hills booth at Embedded World. The 2006 event took place February 14-16 in Nuremberg, Germany. Papers delivered at the Nuremberg show included "The Changing Landscape of Microcontroller Selection" by EEMBC President Markus Levy and "Performance Increase of Next-Generation 32-Bit Automotive Embedded Processors, by Patrick Leteinturier, EEMBC Automotive Subcommittee chair.

Upcoming Speaking Appearances

"A Technical Insight into the EEMBC MP Benchmarks" is being presented by John Goodacre of ARM, chair of EEMBC's Multiprocessing benchmark group, at **Multicore Expo**. The show takes place in Santa Clara, March 21-23. www.multicore-expo.com.

"**Benchmark Methodology for Evaluating Processor Energy Costs and Performance**," a presentation on the new EnergyBench benchmark from EEMBC, will be presented at **Spring Processor Forum** by Shay Gal-On, EEMBC director of software engineering. Shay will provide the first public disclosure of the range of considerations that went into the development of EnergyBench, including how to measure power consumption when a processor is running different peripherals or in sleep mode, and how to measure power drains while emulating the

behavior of the processor when embedded in the end application. The presentation will take place May 17. Spring Processor Forum runs May 15-18 at the Doubletree Hotel in San Jose. www.in-stat.com/spf/06

Multicore processor architectures are redefining the laws of processor evolution, and EEMBC President Markus Levy predicts the number of cores will grow exponentially, roughly doubling with each processor generation. Furthermore, chips will exhibit increasingly higher degrees of heterogeneity in terms of cores, interconnect, hardware acceleration, and memory hierarchies. Learn more in "**Standardized APIs and Benchmarks For Multicore Development**," Levy's presentation at the **Wind River 2006 Worldwide User Conference**. The event takes place May 15-18 in Orlando, Florida. In his presentation, Levy will cover EEMBC's approach to multicore benchmarking as well as approaches being adopted by the Multicore Association to standardizing multicore APIs. www.windriverevents.com/userconference06

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Letter from the President (continued from page 1)

tion laboratory. Our two major goals are to timely respond to the needs of our members and licensees for benchmark software that is relevant to real-world applications, and to provide the high level of technical support that they deserve. To make both a reality, a closer integration of the work our members volunteer in application-focused working groups and the consortium's full-time technical apparatus is an obvious requirement.

This is what we are aiming to provide with the EEMBC Technology Center, and we are fortunate to have in Shay Gal-On, our new Director of Software Engineering, a strong leader who combines many years of experience in the processor industry with an intimate understanding of EEMBC's values and processes. Shay has served now for several years as a member representative on our Board of Directors, as well as on the majority of our working groups.

He moreover brings us much experience in working with multiple compilers and processor architectures and an admirable track record of accomplishments as a software engineer for PMC Sierra, Improv Systems, and Intel. As the leader of the EEMBC Technology Center, he will be based in San Jose, and you'll be hearing more about what's happening in Shay's future "From the EEMBC Technology Center" columns in this newsletter. Meanwhile, please feel free to contact Shay directly with your questions, concerns, or just to say hello. He can be reached at shay@eembc.org.

Markus Levy

EEMBC
Board of Directors News

At its January 10 meeting in Las Vegas, the EEMBC Board of Directors reviewed **development priorities on benchmark source code** for a number of different application areas and agreed that these would be addressed in the following order of priority:

1. Network storage
2. Multiprocessing
3. Workload characterization
4. Streaming media
5. AutoBench Version 2.0
6. VoIP

This ranking was established by a vote in which each voting member present was entitled to cast three votes in favor of any of the benchmark suites on which work had already begun.

This same Lucky Bucks system was used to set the **Board of Directors' next meeting in Silicon Valley** on April 10 and 11, for which the tentative agenda items are the following:

April 10
11 a.m. -12 p.m.
Power/Energy Working Group
12 p.m. – 1 p.m.
Office Automation Version 2.0 Working Group (working lunch)
1 p.m. – 4 p.m.
Storage Working Group
4 p.m. – 5 p.m.
Java Working Group

April 11
8:30-a.m. to 5 p.m.
Board of Directors Meeting
Agenda items:
- General technical discussion related to Test Harness modifications
- Certification process
- Technical project update
- Logistics and marketing update
- Budget review
- Further discussion on open publishing (tabled from previous meeting)
- Use of certification services other then EEMBC Technology Center
- Japan representation for EEMBC
- Release schedule for OABench Version 2.0

Details of the meeting location will be announced shortly.

Introducing Shay Gal-On

Shay Gal-On, EEMBC's new Director of Software Engineering and leader of the EEMBC Technology Center, comes to the Consortium from PMC Sierra, where he was Principal Performance Analyst in the Microprocessor Products Group. To his new role, he brings extensive experience working with EEMBC benchmark software, having ported and optimized the benchmarks for a wide variety of architectures. A compiler/tools expert, he has devoted considerable effort to analyzing the effects of various compilers on benchmark performance and has ported the EEMBC benchmarks using Wind River Diab, Green Hills MULTI, ARM.RVDS, Improv Jazz tools, the Stretch/Tensilica development environment, and many versions of gcc. He has also served as a member representative on the EEMBC Board of Directors and thus is well acquainted with EEMBC processes. As Shay puts it, "Being a representative Board member for a few years, going through the certification process a few times, leading the silicon power working group, and taking an active role in the testing and evaluation of most of the benchmark suites has given me a handle on 'the other side of the fence.'" You can E-mail Shay at shay@eembc.org.