

# Center for Embedded Systems

An NSF Industry/University Cooperative Research Center

Year 4: Industry Advisory Board (IAB) Mid-term Update Meeting

January 22-23, 2013

IAB Host / Location: Intel Corporation, Chandler, AZ , CH7-100

Academic Host: Arizona State University

## Agenda

revised: January 20, 2013

### Objectives

- Provide a forum for NSF, CES IAB members, faculty, and students to interact and discuss research projects, areas of interest, and opportunities
- Deliver a brief update on Center activities, mid-term update on Year 4 projects
- Conduct IAB business meeting

Tuesday, January 22, 2013

7:30 - 8:00 am	<b>Registration Check-in and Light Breakfast</b> , Intel Corporation 5000 W. Chandler Blvd., Bldg. CH7-100, Chandler, AZ 85226
8:00 – 8:20 am	<b>Welcome</b> , Byron Gillespie, Intel Corporation; CES – IAB Chair <b>Opening Remarks &amp; Introductions</b> , Sarma Vrudhula (ASU) and Spyros Tragoudas (SIUC)
8:20 – 8:30 am	<b>NSF Message</b> , Alex Schwarzkopf, Consultant, NSF ENG/OAD
8:30 – 9:30 am	<b>Keynote Address / Q&amp;A Session</b> , Dr. Jon Slaughter, VP, Technology Research & Development, Everspin Technologies, <i>Recent Progress and Future Prospects for Magnetoresistive RAM Technology</i>
9:30 – 9:40 am	<b>Agenda / Format Overview</b> , Byron Gillespie, Intel Corporation; CES – IAB Chair
9:40 – 9:50 am	<b>BREAK</b>
9:50 – 10:10 am (2 min presentations)	<b>Mid-term Updates</b> , year 4 projects – GROUP 1 1.1: Design of an Optimal Closed Loop Controller and its Implementation in an OS Scheduler for Dynamic Energy Management in Heterogeneous Multi-Core Processors; Sarma Vrudhula 1.2: Object Identification & Tracking for Embedded Systems; Lalit Gupta 1.3: Towards Predictable Execution of Safety Critical Tasks on Mixed-criticality Multi-core Platforms; Harini Ramaprasad, Dimitri Kagaris 1.4: Trustable Access Mechanisms for Embedded Systems; Ning Weng, Spyros Tragoudas 1.5: Synthesis and Design of Robust Threshold Logic Circuits; Spyros Tragoudas, Sarma Vrudhula, Haibo Wang 1.6: Improving Usability of Mult-core DSPs with Scratch Pad Memories; Aviral Shrivastava
10:10 – 11:30 am	<b>Poster Session</b> , year 4 projects – GROUP 1

11:30 am – 12:10 pm	<b>Complete LIFE Forms online (20 minutes), year 4 projects – GROUP 1</b> <b>LIFE Forms Feedback: Discussion (20 minutes), year 4 projects – GROUP 1</b>
12:10 – 1:10 pm	<b>LUNCH</b>
1:15 – 1:30 pm (2 min presentations)	<b>Mid-term Updates, year 4 projects – GROUP 2</b> 2.1: Critical Path Analysis of Multicore Systems using BDDs; Spyros Tragoudas 2.2: Adaptive Compressive Sensing Techniques for Low Power Sensors; Haibo Wang, Spyros Tragoudas 2.3: Curriculum Development: Embedded System Design using Atom-based Platforms; Haibo Wang, Ning Weng 2.4: Pilot Study of Energy Harvesting Devices towards the Development of a Prototype; Constantine Hatziaodoniu, Frances Harackiewicz, Philip Chu 2.5: Resolver Sensor Conditioning Size Reduction; Constantine Hatziaodoniu, Haibo Wang 2.6: Parallelization of Embedded Control Applications on Mult-core Architectures: A Case Study; Georgios Fainekos and Karam Chatha
1:30 – 2:45 pm	<b>Poster Session, year 4 projects – GROUP 2</b>
2:45 – 3:25 pm	<b>Complete LIFE Forms online (20 minutes), year 4 projects – GROUP 2</b> <b>LIFE Forms Feedback: Discussion (20 minutes), year 4 projects – GROUP 2</b>
3:25 – 3:35 pm	<b>BREAK</b>
3:35 – 3:50 pm (2 min presentations)	<b>Mid-term Updates, year 4 projects – GROUP 3</b> 3.1: All-optical Embedded Fiber-optic Up/down-links for Motor Controller; Mohammad Sayeh 3.2: High Quality Power-aware Testing Methodologies for Integrated Circuits; Spyros Tragoudas 3.3: Development of Electronic System-level Hardware-Software Co-synthesis Approach; Glenn Leary (for Karam Chatha) 3.4: Temporal Logic Testing for Stochastic Cyber-Physical Systems; Georgios Fainekos 3.5: Feasibility of Integrating Memristors and Threshold Logic for Compact, Low Power Digital Circuits; Hugh Barnaby, Sarma Vrudhula
3:50 – 5:05 pm	<b>Poster Session, year 4 projects – GROUP 3</b>
5:05 – 5:45pm	<b>Complete LIFE Forms online (20 minutes), year 4 projects – GROUP 3</b> <b>LIFE Forms Feedback: Discussion (20 minutes), year 4 projects – GROUP 3</b>
6:30 pm	<b>Happy Hour &amp; Dinner (all), Firebirds Wood Fired Grill (Chandler Fashion Mall), 3435 West Chandler Boulevard Chandler, AZ 85226</b>

Wednesday, January 23, 2013

7 – 8 am (optional)	ASU Flexible Display Presentation OR ASU Curriculum Training Presentation (TBA)
8 am – 11 am	<b>Light Breakfast, IAB meeting (closed session), Intel Corp.</b>