

Center for Embedded Systems

An NSF Industry/University Cooperative Research Center

Year 7: Industry Advisory Board (IAB) New Projects Meeting

IAB Annual Meeting - Minutes

May 13, 2015, 8 a.m.

Location: Morris Library, 7th Floor, SIUC

Academic Host: Southern Illinois University Carbondale

CONFIDENTIAL

rev 1: May 20, 2015 – pre-approval

The meeting was conducted by IAB chair Rathish Jayabharathi, Intel. Attendees:

IAB Members (ASU)

Mark Fichtner	Marvell Semiconductor	mrfichtn@marvell.com
Jennifer Wang	Marvell Semiconductor	wangj@marvell.com
Rudy Beraha	Qualcomm	rberaha@qti.qualcomm.com
Andrew Vandivort	Raytheon	amvandivort@raytheon.com
Jim Kapinski	Toyota Technical Center	jim.kapinski@tema.toyota.com
Xiaoqing Jin	Toyota Technical Center	xiaoqing.jin@tema.toyota.com

IAB Members (SIU)

Dona Burkard	Ford Motor Company	dburkar1@ford.com
Rathish Jayabharathi	Intel	rathish.jayabharathi@intel.com
Jeff Nelson	UTC Aerospace Systems	jeff.nelson2@utas.utc.com

Guest

Wilson, Howard	Consultant	hawlsn2357@gmail.com
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Others

Craig Scott, evaluator	University of Washington	scottcs@u.washington.edu
Spyros Tragoudas – site dir.	Southern Illinois University	spyros@engr.siu.edu
Sarma Vrudhula – center dir.	Arizona State University	vrudhula@asu.edu
Nancy Beasley – project mgr.	Southern Illinois University	nancyj0@siu.edu
Lisa Christian – project mgr.	Arizona State University	lisa.christian@asu.edu

STATE OF THE CENTER (Sarma Vrudhula)

- Reviewed Year 7 membership:
 - We are very pleased to welcome Robert Bosch GmbH as a new member to CES. We are engaged with Bosch's corporate sector research and advance engineering (CR/AEA) group out of Stuttgart Germany, through the efforts of Rainer Gmehlich, Rainer.Gmehlich@de.bosch.com
 - Because of the timing of their agreement signing, Bosch will join "in cycle" and vote via proxy for Year 7 projects at today's meeting.

- Year 7 Financial Projection – ASU:

Industry Member	Membership \$'s (\$K)
Bosch	\$50
Johnson Controls**	\$50*
Marvell	\$50
Qualcomm	\$50
Raytheon	\$50
Toyota	\$50
Total	\$300

* Indicates out-of-cycle project, for which voting will not occur at this meeting

** Johnson Controls will be in sync with the CES project cycle at the beginning of year 8 (May 2016 voting), compliant with CES by-laws

- Year 7 Financial Projection – SIU:

Industry Member	Membership \$'s (\$K)
Ford Motor Co.	\$50
Intel	\$50
UTC Aerospace	\$75
Total	\$175

OLD BUSINESS

- Motion to approve minutes from February 2015 meeting.
 - [Approved.](#)
- CES industrial fellows program (internships) – members voiced plans for the upcoming year.
 - [Marvell interested in intern for fall 2015 for part-time. Qualcomm hired CES student, Ben Gaudette, for summer 2015, and is interested in a student for summer '16. Rudy's budget approval cycle is in the fall, with the fiscal year beginning in October. Raytheon is looking for 1 student immediately for summer '15. Needs to be U.S. citizen. Marvell suggested that student resumes be available at the IAB meetings.](#)
- Embedded Systems Week sponsorships
 - [This opportunity is on hold due to lack of interest for the event in October 2016.](#)
- Managing director update:
 - [Howard Wilson and CES leadership to work on NSF proposal for February 15, 2016 submission deadline.](#)
- Academic site update:
 - [Neither the University of Virginia nor University of Oregon is likely to pursue joining CES as a partner academic site. Univ. of Virginia's nano-center will most likely pursue its own I/UCRC. Univ. of Oregon's interest in CES was led by an assistant professor, who feels this leadership role is not a fit for him at this point in his career.](#)
- Recruiting updates:
 - [ASU's relationship-building efforts with Samsung stalled when the division that Sarma was working with was eliminated from the company. Relationships with Nvidia and Freescale / NXP are in the works. Spyros has reached out to MathWorks and Rockwell Automation.](#)
 - [All existing IAB members were encouraged to look for opportunities to promote CES membership within other divisions of their organizations. Both Sarma and Spyros \(and possibility other faculty members\) are ready and willing to do site-visits for member companies.](#)

NEW BUSINESS

- Voting conducted on 11 research projects, as reviewed the previous day. Rathish explained voting process. Votes to be cast:

Industry Member	Votes
Bosch	10
Johnson Controls	(out of cycle)
Marvell	10
Qualcomm	10
Raytheon	10
Toyota	10
Ford	10
Intel	10
UTC Aerospace	15
Total	85

Voting Results:

#	Title	PI	SCHOOL	CODE	VOTES	DETAIL
1.1	Debugging Errors in Failed Functional Test Sequences	Spyros Tragoudas, Themistoklis Haniotakis	SIU	Y7_ST_TH	10	Intel 7; Marvell 2; Toyota 1
1.2	Building Energy-Efficient, Adaptive, and Secure Wireless Sensor Node By Harnessing Randomness	Fengbo Ren	ASU	Y7_FR	10	Qualcomm 6; Marvell 2; Ford 2
1.3	A High-Performance, QoS-aware Memory Scheduling Approach for Highly Parallel, Heterogeneous Smartphone SoCs	Carole-Jean Wu	ASU	Y7_CJW	10	Qualcomm 2; Marvell 1; Raytheon 5; Ford 2
1.4	Synchronizing Finite State Machine Controllers for Distribution Systems	Dimitri Kagaris	SIU	Y7_DK	5	UTC 5
1.5	Embedded Controller for Reduction of Torque Oscillations in a PMSM	C.J. Hatziaodoniu	SIU	Y7_CH	5	UTC 5
2.1	Online Personalization for Smart Wearable Healthcare Systems	Jingrui He	ASU	Y7_JH	0	0
2.2	On the Verification of Formal Methods for Digital Embedded Control Systems	Dimitri Kagaris, Spyros Tragoudas	SIU	Y7_DK_ST	5	UTC 5
2.3	Dynamic Learning of Application Characteristics for Performance and Energy Management of Smartphones	Sarma Vrudhula	ASU	Y7_SV	10	Marvell 5; Intel 3; Raytheon 2
2.4	Automated Testing for Functional Coverage for Cyber-Physical Systems	Georgios Fainekos	ASU	Y7_GF	20	Bosch 10; Toyota 8; Ford 2
2.5	Exploiting 3D IC Platform to Realize Low Power and High Performance Image/Video Processing	Chao Lu	SIU	Y7_CL	0	0
2.6	Distributed run-time management for multi-agent system	Iraklis Anagnostopoulos	SIU	Y7_IA	10	Ford 4; Toyota 1; Qualcomm 2; Raytheon 3

- Vote on new IAB vice chair:
 - Nomination and vote for in-coming vice chair, Dona Burkard of Ford.
 - Chair Rudy Beraha, Qualcomm, to preside over meetings: January 2016, May 2016, January 2017, May 2017
 - Vice Chair Dona Burkard, Ford, to preside over meetings: January 2018, May 2018, January 2019, May 2019
- Reporting on final reports:
 - After much discussion about adding an in-person element to reporting final projects, the IAB requested that PIs available at the January meeting be asked to participate in a poster session (no presentations) that includes technical slides and a demo if applicable.
 - PIs not traveling to the January IAB meeting can either send a poster or be available for a teleconference (upon request).
- Visibility / recruiting within industry member organizations and at prospective companies
 - The IAB has requested that the center produce a short promotional video on the center (1-3 minutes, “what we do”, participating companies, application areas, types of research projects, student engagement, etc.). This could be distributed within member companies and used as a promotional tool to prospective members.
 - The IAB requested that the Center produce an interactive AV presentation for visibility / research updates / recruiting within member organizations, per these specifications (Year 6 technical briefing):
 - Timeframe: August/September.
 - Format: pre-scheduled 2-way call-in audio / video / Power Point, with ability for interactive Q&A. Taped for future playback.
 - Content: Brief intro to center and short summaries of representative research areas; content to be indexed for later viewing.
 - Participants: Sarma, Spyros and key faculty (suggested: Georgios Fainekos, Carole Wu, Haibo Wang, and TBD).
 - Length: approx. 2 hours, but segmented and indexed to enable viewing of segments.
 - Issues: organize among IAB per doodle survey for scheduling, determine mechanics of speakers at two different locations (ASU and SIU), schedule technical dry run to work out any issues, anticipate passing firewalls at corporate sites, particularly may be an issue at Raytheon, Toyota, and Marvell.
 - Commitment: try this during fall 2015 and later evaluate its value and effectiveness
- Projects that did not receive votes:
 - Brief discussion on how (if) to handle projects that did not receive any votes. Marvell expressed concern that PIs know that some in the IAB like to know what is out there; however, they may have simply run out of votes. Others felt some projects aren’t in their space and therefore, don’t warrant votes.
 - While there was a comment that projects without votes have been funded in the past and other well-supported research efforts “diluted” to support all projects; Lisa clarified that this has not happened at CES and that it is common for projects with few or no votes to simply not be funded.
 - Craig Scott recommended that in order for faculty members to continue to develop proposals of interest and value to industry, CES might try integrating a “Wicked Problem Panel” in the next meeting. Format would be a 30-minute panel session (no PowerPoints) in which industry members extemporaneously talk about areas in which their teams are stuck, having problems, or would be extremely motivated to have a solution to. The IAB seemed amenable to trying this in January 2016.
- Debrief on meeting:
 - Some discussion on alternate locations for May meeting to lesson travel burden. No decisions made.
 - See previous notes about additional final project report out at January meeting.

- Set future meeting dates:
 - January 26-27, 2016, Tempe
 - May 2016 meeting TBD, location also TBD

SUMMARY OF ACTION ITEMS:

- Sarma to follow-up immediately about a Raytheon summer '15 placement.
- LC to follow-up with Marvell about details for a fall intern.
- ASU to plan to place intern at Qualcomm, arrange after first of the year.
- LC to arrange to have student resumes available to the IAB at January meeting.
- Sarma and Spyros to communicate to faculty new final reporting requirements.
- LC to announce funded CES projects for Year 7 in early August.
- LC to research timing, cost options, and feasibility for short promotional video.

SUMMARY OF ACTION ITEMS, cont'd.

- LC to distribute IAB survey to gain consensus on a date for Year 6 technical briefing in September.
- Directors and LC to coordinate, test, and conduct Year 6 technical briefing in September.
- LC to write and post approved minutes (Feb 2015) and pre-approved minutes (May 2015).
- LC to update leadership, faculty, and student (bios and resumes if available) pages on website.
- LC to schedule for January 2016 agenda: poster session for Y6 final reports. IF some PIs are not available on-site in January, arrange to have them give a report remotely.
- LC to schedule for January 2016 agenda: open networking time for IAB without scheduled presentations or attendance by directors.
- LC to schedule for January 2016 agenda: "Wicked Problem Panel" for IAB members to promote exchange between industry and faculty.