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Software Certification Consortium
Meeting #11
May 5 – 6, 2013

Competencies and Education Required for
Development and Certification of Systems Containing Software

AGENDA

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<u>**SUNDAY**</u>

11:30 – 12:30	*Lunch*
12:30 – 13:00	Welcome and Introductions
13:00 – 13:30	**Dick Fairley** – Colorado Technical University / IEEE Computer Society "Bodies of Knowledge and Competency Models for Software and Systems Engineering"
13:30 – 14:00	**Phil Laplante** – Pennsylvania State University "Licensing of Professional Software Engineers"
14:00 – 14:45	**Discussion 1**
14:45 – 15:00	*Coffee*
15:00 – 16:30	**Breakout #1**
16:30 – 17:00	Report back from Breakouts
17:30 – 19:00	*Social*
19:00 – 21:00	*SCC Dinner*

<u>**MONDAY**</u>

08:30 – 09:00	**Steve Arndt** – US Nuclear Regulatory Commission "Competencies Required for Engineering of Digital Systems in Nuclear Power Plants"
09:00 – 09:30	**Joe D'Ambrosio** – General Motors "Competency Requirements for Engineering of Software Based Automotive Systems"
09:30 – 10:15	**Discussion 2**
10:15 – 10:30	*Coffee*
10:30 – 11:00	**Alan Wassyng** – McMaster University "The Educational Value of Challenge Problems"
11:00 – 11:30	**Anura Fernando** – Underwriters Laboratories & **John Hatcliff** – Kansas State University "Challenges in Developing a Safety Standard for Medical Application Platforms"
11:30 – 12:15	**Discussion 3**
12:15 – 13:15	*Lunch*
13:15 – 13:25	Medical Device Challenges – Overview and Options (Research & Education)
13:25 – 13:40	Example PCA Pump Requirements Document
13:40 – 13:50	PCA Pump Hardware Platform
13:50 – 14:00	PCA Pump Challenge Potential Work Plan
14:00 – 14:10	Intro to Insulin Pump Challenge & Work Plan
14:10 – 14:20	Update on Pacemaker Challenge
14:20 – 14:30	*Coffee*
14:30 – 15:00	**Discussion 4**
15:00 – 16:30	**Breakout #2**
16:30 – 17:15	Report back from Breakout
17:15 – 17:30	Actions and Wrap-up

POTENTIAL BREAKOUT #1 SESSION TOPICS

What Body of Knowledge do Developers & Certifiers of Safety Critical Systems Containing Software Need to Know?

How can Developers & Certifiers Gain This Knowledge?

How can the Software Certification Consortium Contribute to the Development of the Body of Knowledge, and the Availability of Education & Training That Encompass the BoK?

Is there a system and software engineering process (based on an existing standard) that can be adopted to organize the BoK, educational and training material?

Beyond educational and training material, is there a need for a comprehensive set of procedures that capture effective methods for development and certification of safety critical systems containing software?

If needed, what role can SCC play in getting the procedures developed in an open access manner?

What measures/metrics are available now for arguing the adequacy of software quality?

Which domains should SCC address first? (medical devices, nuclear power, automotive, aviation, financial, other)

BREAKOUT #2

Discussion 4 cut to 20 minutes
Next 10 minutes: present suggested topics, ask for other suggestions, vote for top 5 to be used in the breakout session.

Suggested topics.
- Goals: research, education, regulatory, practice
- SCC's role in the challenges
- How do we implement a certification regime for the challenges?
- Rules for the challenges
- Timeline – publications, competition, educational materials
- Work plans for the PCA and/or insulin pump challenge problem

Breakout: 5 groups. Each group assigned a primary topic. Must report back on that topic. Can/should also report back on the other 4 topics

Links of Interest

1) Software Engineering Body of Knowledge – www.swebok.org

2) Systems Engineering Body of Knowledge – www.sebokwiki.org

3) Software Engineering Licensure –
   http://www.todaysengineer.org/2012/oct/software-engineering-licensure.asp