

Software Certification Consortium

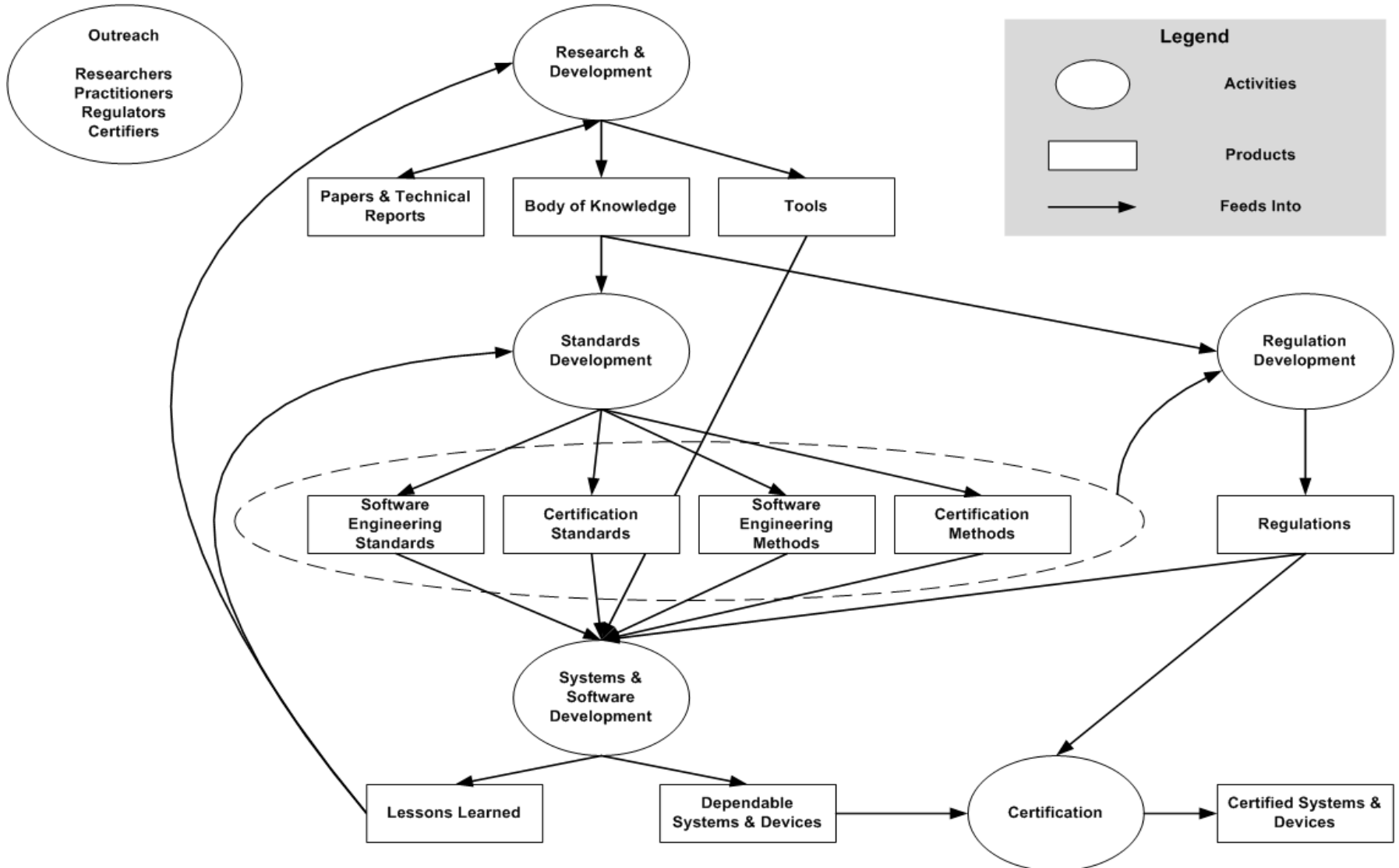
Meeting #11
May 5 - 6, 2013



Welcome & Introductions

- **Alan Wassyng**
- **Brad Martin**
- Workshop Participants
- Remote Participants

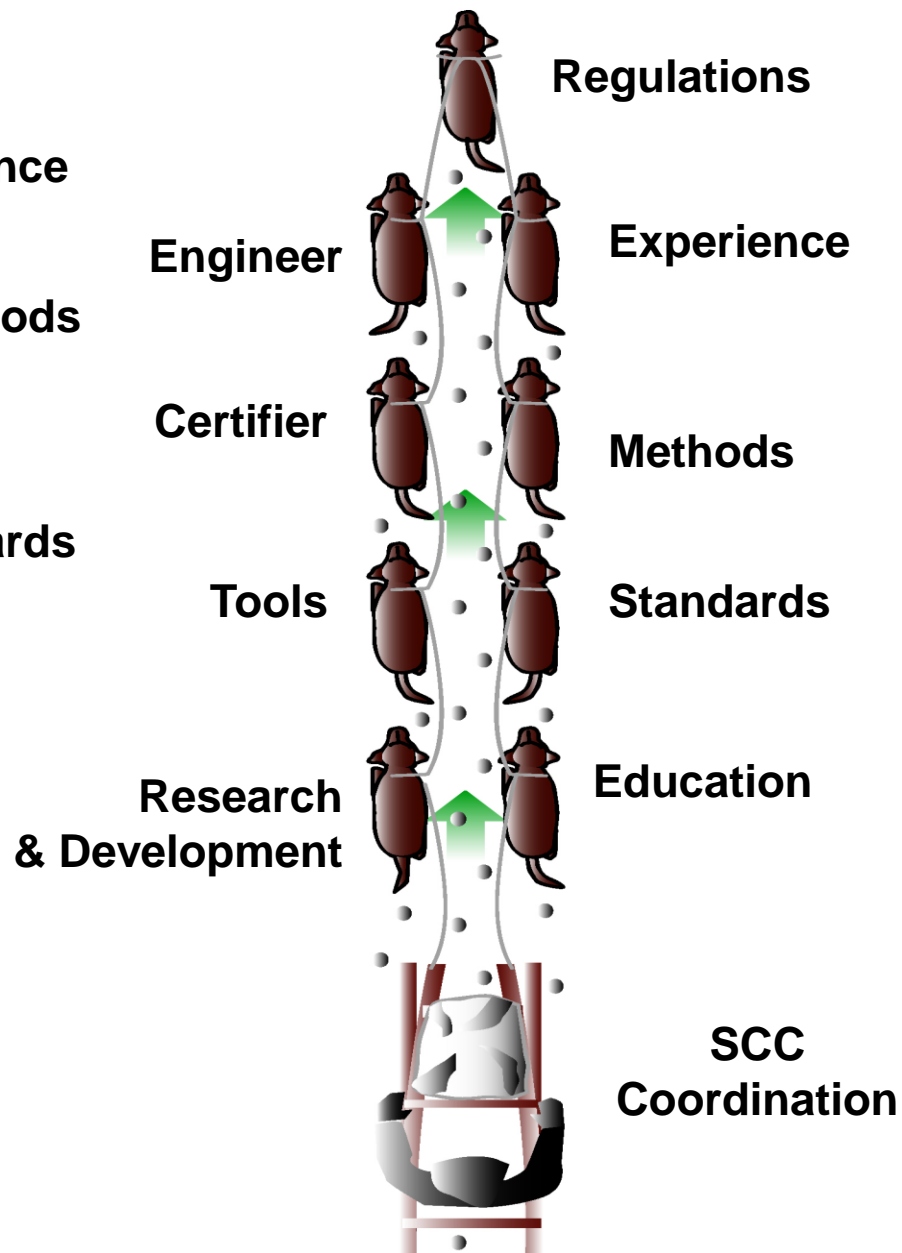
Scope & Deliverables





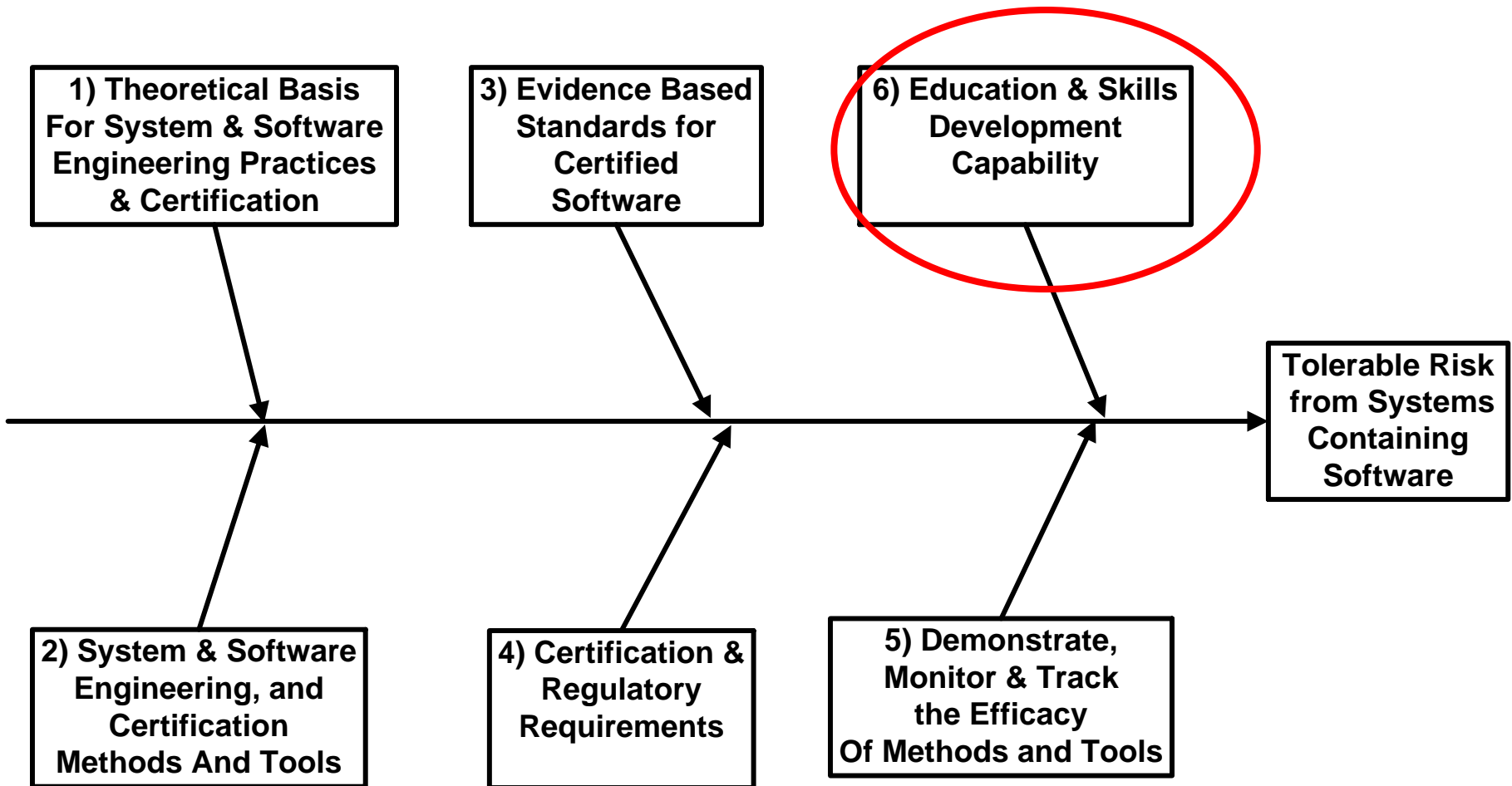
Dog Sled - Not Aligned

Same Effort but Progress



Dog Sled - Aligned

Overall SCC Outcomes



Workshop Theme

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

Agenda

<u>SUNDAY</u>	
11:30 – 12:30	<i>Lunch</i>
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	<i>Coffee</i>
15:00 – 16:30	Breakout #1 – Bodies of Knowledge
16:30 – 17:00	Report back from Breakouts
17:30 – 19:00	<i>Social at Drummer’s Lot Pub</i>
19:00 – 21:00	<i>SCC Dinner at Treaty of Paris</i>

Agenda

<u>MONDAY</u>	
08:30 – 09:00	Anura Fernando – Underwriters Laboratories & John Hatcliff – Kansas State University “Challenges in Developing a Safety Standard for Medical Application Platforms”
09:00 – 09:30	Steve Arndt – US Nuclear Regulatory Commission “Competencies Required for Engineering of Digital Systems in Nuclear Power Plants”
09:30 – 10:15	Discussion 2
10:15 – 10:30	<i>Coffee</i>
10:30 – 11:00	Ramesh S – General Motors “Competency Requirements for Engineering of Software Based Automotive Systems”
11:00 – 11:30	Alan Wassyng – McMaster University “The Educational Value of Challenge Problems”
11:30 – 12:15	Discussion 3
12:15 – 13:15	<i>Lunch</i>
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	<i>Coffee</i>
14:30 – 15:00	Discussion 4
15:00 – 16:30	Breakout #2 – Challenge Problems
16:30 – 17:15	Report back from Breakout
17:15 – 17:30	Actions and Wrap-up

Breakout #1 - BoKs

1. What Body of Knowledge do Developers & Certifiers of Safety Critical Systems Containing Software Need to Know?
2. How can Developers & Certifiers Gain This Knowledge?
3. 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?
4. 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?
5. 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?
6. If needed, what role can SCC play in getting the procedures developed in an open access manner?
7. What measures/metrics are available now for arguing the adequacy of software quality?
8. Which domains should SCC address first? (medical devices, nuclear power, automotive, aviation, financial, other)

Breakout #2 – Challenge Problems

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

Action Items