Workshop on Assurance Cases:  
Best Practices, Possible Obstacles, and Future Opportunities  
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For safety-, mission-, or security-critical systems, regulations or acquisition guidelines typically require a documented body of evidence to provide a compelling case that the system satisfies specified critical properties; in other words, an argument is needed to "make the case" for the system's suitability or quality. These guidelines may use terms such as safety case, certification report, or security case; we collectively call them assurance cases.

It is essential that the framework for developing and assessing assurance cases be effective and efficient, since it is the basis for making critical decisions about software systems where the consequences of failure may be substantial. At the same time, the costs and constraints of making the assurance case can overwhelm those for the software development itself. It is our observation that, in general, frameworks for assurance cases could be much improved. The maintenance of assurance cases once produced is of particular concern.

The purpose of this workshop is to promote communication among groups with similar challenges in assurance cases - groups that often are unaware of what is being done in other similar communities. We hope that the workshop will start a process of continuing discussion across disciplines on the central challenges and opportunities for assurance cases, and initiate the development of a standard set of best practices and guidelines for developing and assessing assurance cases. In addition to specific summary outputs from the workshop, we will use the workshop as an opportunity to gauge interest and commitment in forming an IEEE sponsored planning group to address possible standards activities for assurance cases. At a minimum we would like to make this the first in a series of annual workshops on assurance cases, and begin to form a cross-discipline community of interest.

We have the structured the workshop in three sessions. The first session will focus on current best practices, experiences, and recurring challenges. The second session will focus on promising research (tools, notations, techniques, etc.) and new opportunities for developing, reviewing, and maintaining assurance cases. The final session will include a summary and review of key points from the first two sessions, moderated discussion on important consensus and disagreements, and identification of next steps.

Position papers, presentations, and follow up material after the workshop will be posted on the workshop web site (www.aitcnet.org/AssuranceCases).