

TECHNICAL COMMITTEE ON \_\_\_\_\_ Dependable Computing & Fault Tolerance (TCFT) \_\_\_\_\_  
 REPORT SUBMITTED BY: \_\_\_\_\_ Douglas Blough \_\_\_\_\_

**KEY VOLUNTEERS (PLEASE LIST YOUR TC'S ExCom AND ANY OTHERS)**

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## 2015 PROGRESS REPORT & PLANS

Please enlist your membership's participation in your plans for the coming year by suggesting upcoming opportunities for Volunteer involvement.

ACTIVITY AREA	2015 ACCOMPLISHMENTS	2016 PLANS
<p><b>Highlights:</b> Highlights of the past year, and special plans underway for the coming year. Indicate if you'd be interested in formally sharing your success stories with other TC Chairs at an upcoming CS TAC meeting.</p>	<ul style="list-style-type: none"> <li>- Flagship Dependable Systems &amp; Networks Conference (<a href="http://2015.dsn.org">2015.dsn.org</a>) was held in Rio de Janeiro, June 2015.</li> <li>- TCFT sponsored the following conferences DSN, PRDC, DFT</li> <li>- DSN 2015 continued several recent innovations               <ul style="list-style-type: none"> <li>o A single paper submission and review process with a single PC for the entire conference (previously DCCS and PDS ran separate submission and review processes)</li> <li>o The 2nd Best Paper Award for the conference was made; the Program Committee and Steering Committee narrowed candidates to 3 and conference attendees voted for the award after the 3 papers were presented in a special session at the conference</li> <li>o Double-blind review process for</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- DSN 2016 will be held in Toulouse (France) in late June. <a href="http://www.dsn.org">www.dsn.org</a> contains complete details of the program as well as participation opportunities</li> <li>- TCFT will continue to sponsor the PRDC and DFT conferences.</li> <li>- Interact with other TCs and coordinate awards (service, contributions, travel)</li> <li>- Continue to engage the community through periodic mailings</li> <li>- A new Program Committee (PC) model for DSN is being developed, which will permit increased involvement of industry representatives and other researchers who are not able to attend the previously mandatory in-person PC meeting.</li> </ul>

	<p>submissions and author rebuttals</p> <ul style="list-style-type: none"> <li>- The TC newsletter continued operation as a mailing list along the model of DBworld to provide timely information to the community.</li> <li>- For DSN, two documents establishing the General Chair and Program Chair processes continue to be used to provide for consistent processes from year to year of the conference offerings.</li> <li>- The Carter Award, previously offered as a Best Student Paper award at DSN, was converted to a Best PhD Dissertation award, supported jointly by TCFT and IFIP WG 10.4. The first set of candidate dissertations is currently being evaluated by a committee of experts.</li> <li>- At the TC business meeting, Luxembourg was selected as the location for DSN 2018 (in 2015, Denver, Colorado was chosen as the site for DSN 2017).</li> </ul>	
<p><b>Conferences:</b> Describe TC's sponsorship, co-sponsorship, or co-operation of conferences. Include any planned launches or discontinuations.</p> <p>Did the TC actively participate on any program committees, technical committees, or steering committees of these conferences?</p>	<p>TC-FT executive board members have actively volunteered in senior positions at most of the TC-FT sponsored conferences (financial or technical). Members of the TC will be leading also the Program Committees for the DSN 2016 and DSN 2017 editions.</p> <p>The flagship conference of the TC-FT is The IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) <a href="http://www.dsn.org">www.dsn.org</a>. DSN represents the continuation of over four decades of tradition in the field of dependable computing. It started with the IEEE</p>	<ul style="list-style-type: none"> <li>- DSN 2016 will include the 3<sup>rd</sup> Best Paper Award; as of the date of this report, the Program Committee and Steering Committee have narrowed the best paper candidates; as done in 2014 for the inaugural award, the 2016 award will be chosen via a vote of conference attendees during a special session of the conference in Toulouse</li> <li>- The Steering Committee has also approved making the Carter Award a true dissertation award, i.e. an award for the</li> </ul>

International Symposium on Fault-Tolerant Computing (FTCS), and evolved in 2000 to a larger and broader conference, combining FTCS and the Conference on Dependable Computing for Critical Applications sponsored by IFIP WG 10.4. The International Performance and Dependability Symposium was also brought under the DSN umbrella. In addition to the main technical track, DSN has Workshops, Tutorials, a dedicated Student Forum, and Fast Abstracts / Work in Progress to highlight late-breaking research. DSN is the premier forum for researchers, practitioners, and users to learn and exchange information on the latest research results in dependable systems and networks. DSN has been steadily growing.

DSN 2014 was the first edition where the DCCS and PDS symposia were integrated into a single conference that will include all aspects of previous symposium. The DSN structure has to:

- o be agile, adaptable and flexible accommodating changes along the years through continuous assessment done by the SC;
- o ensure the continuity with the current DSN topical coverage;
- o ensure a wide breath which includes traditional DSN thematic areas and also add in some explicit way thematic areas where DSN community is interested to expand;
- o ensure a homogeneous process of paper selection;

best PhD dissertation in the area of dependable computing in a given area. The first set of dissertations is currently being evaluated by a set of experts and the inaugural new award will be presented at DSN 2016.

o ensure a single harmonized quality conference;

Following these principles the TC elaborated a vision of the large breadth of DSN based on a matrix whose rows are thematic areas and columns represent the methodological areas. Methodological areas can be considered as the ones looking at the lifecycle of a dependable system thus being long term while thematic areas seem more flexible (possibly) short term. The TC will monitor each of the areas and assess the success of each thematic area on a regular basis. Thus the matrix can be regularly updated by the TC with the addition of new areas and the removal of others. The current set of thematic areas that began in 2014 and will continue in 2016 are hardware, software, cyber-physical systems, socio-technical system, clouds, networks, and models and methodologies for programming, evaluating, and assessing dependable and secure systems.

The TC-FT co-sponsors the PRDC, Pacific Rim International Symposium on Dependable Computing. PRDC is an Asia-Pacific conference that aims at promoting dependable computing research in the Pacific region. The 2015 edition was successfully held in Zhangjiajie, China, November 18-20, 2015.

The TC-FT co-sponsors DFT, the Int'l Symposium on Defect and Fault Tolerance in VLSI and Nanotechnology Systems. DFT is an international

	<p>conference that aims at promoting fault tolerance at micro and nano scales. The 2015 edition was successfully held in Amherst, Massachusetts, October 12-14, 2015.</p>	
<p><b>Communication:</b> Describe your TC's communications strategy (including frequency) with your membership (eg, newsletters, listservs, blogs, Twitter, Facebook, letter from the Chair, Web portal, etc.) Include info on how to subscribe. Any updates or changes completed or planned for the coming year?</p> <p>Please list your URL and the name &amp; email of the Web master.</p>	<p>Before 2013, The TC sent out a periodic newsletter, subscribed and distributed by email and additionally on the <a href="http://www.dependability.org">www.dependability.org</a> website, which informed TC members and other subscribers about relevant events concerning the community, including various calls for conferences.</p> <p>Beginning in 2013 we moved from a newsletter to a mailing list along the model of DBworld. This allows timely circulation of calls, job search etc . The mailing list goes by the name of FTNews. It is open to all the community and moderated by Chuck Weinstock, Software Engineering Institute, USA (<a href="mailto:weinstock@sei.cmu.edu">weinstock@sei.cmu.edu</a>), the Communications Chair of our TC.</p> <p>We operate and participate in the management of two sites, whose domain names are owned by the TC-DCFT:</p> <p>1) <a href="http://www.dependability.org">www.dependability.org</a> is the broader portal, relevant to matters of interest to the community, jointly operated by the IEEE TC-DCFT and the IFIP WG10.4 (International Federation for Information</p>	<p>Continue to run the FTNews mailing list, which has been quite heavily used since its inception.</p> <p>Continue to run the websites with the aim of updating constantly the community</p> <p>Initiative to continue social media presence. The Atlanta DSN edition (2014) was the first to use a twitter channel for sending important conference news and announcements. This new tradition was continued for DSN 2015 and DSN 2016.</p> <p><a href="http://www.dependability.org">www.dependability.org</a> is now the centralized portal for all dependability TC-FT events/issues.</p> <p>TC-FT is glad to link with other TC's for cross participation and dissemination of event announcements</p>

	<p>Processing Working Group 10.4 on Dependable Computing &amp; Fault Tolerance). The Computer Society TC is linked as well as the CS web page linked via the logo at the bottom of the home page</p> <p>2) <a href="http://www.dsn.org">www.dsn.org</a> is the site of the TC-DCFT flagship conference, The IEEE/IFIP International Conference on Dependable Systems and Networks – DSN. The annual DSN conference takes place in June and the web site reflects current information about the next conference, with links to archives of past conferences.</p> <p>The webmaster for the above two pages is Chuck Weinstock, Software Engineering Institute, USA (<a href="mailto:weinstock@sei.cmu.edu">weinstock@sei.cmu.edu</a>), the Communications Chair of our TC.</p>	
<p><b>Meetings:</b> Any TC meetings held/ planned? At what venue (at conferences, teleconferences, videoconferences?)?</p>	<p>The Executive Committee held one physical meeting and two teleconferences during 2015. The physical meeting took place in Rio de Janeiro in June 2015 during DSN 2015. In addition to the official meetings, there were extensive discussions by email.</p> <p>The plenary TC Business Meeting took place at the conclusion of DSN 2015 in Rio.</p>	<p>An Executive Committee meeting is planned at DSN 2016 in June in Toulouse. Also, the full TC Business Meeting will be held at the end of DSN 2016. One Executive Committee teleconference has been held already, another is planned before June, and extensive email discussions are taking place concerning a number of issues impacting the TC currently.</p>
<p><b>Publications:</b> Sponsored publications or hosted special issues of a Computer Society magazine? Plans for one?</p>	<p>TC-FT was involved in launching of the IEEE Transactions on Dependable and Secure Computing. It has now been published for the past seven years on a periodic basis with</p>	<p>No plans for additional publications at this time.</p>

increasing impact ratings.

Additionally, due to cross-cutting nature of dependable computing and fault tolerance technologies, the TC community also publishes in a wide array of IEEE and other professional society journals, including the following:

IEEE Trans. on Computers

IEEE Trans. on Parallel and Distributed Systems

IEEE Trans. on Software Engineering

IEEE Trans. on Information Theory

IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems

IEEE Trans. on Very Large Scale Integration Systems

IEEE Trans. on Reliability

IEEE Journal on Selected Areas in Communications

ACM/IEEE Trans on Networking

IEEE Computer

Proceedings of IEEE



	<p>Journal of the ACM</p> <p>Performance Evaluation</p> <p>Acta Informatica</p> <p>Information Processing Letters</p> <p>Microelectronics and Reliability</p> <p>Theoretical Computing Science</p> <p>Reliability Engineering and System Safety</p> <p>Parallel and Distributed Computing</p>	
<p><b>Standards Committee Activities:</b> Describe TC's support of or participation in Standards-related activities.</p>	<p>None at present</p>	<p>No planned activity</p>
<p><b>Collaborative Efforts:</b> Collaboration with other TCs, IEEE, or other groups or committees?</p>	<p>The IFIP Working Group 10.4 on Dependable Computing and Fault Tolerance has historically co-sponsored (at the 25% level) with the TC-FT the organization of the annual conference, DSN. The formal MoU between IEEE and IFIP is signed each year and this arrangement has worked well for both organizations.</p>	<p>No new collaborations planned.</p>
<p><b>Awards and Recognition:</b> Describe your TC's awards activities – given and planned.</p>	<p>The William C. Carter Award has been presented annually since 1997 to recognize an individual who has made a significant contribution to the field of dependable computing through his or her graduate dissertation research. The award honors the late William C. Carter, a key figure in the formation and development of the field of dependable computing. The award is sponsored</p>	<p>In 2016, DSN will continue the Best Paper Award and student travel awards as in 2015.</p> <p>Modification of the Carter Award to be based on a complete PhD dissertation has been done and the first such award will be presented at DSN 2016.</p>

	<p>by IEEE Technical Committee on Dependable Computing and Fault Tolerance (TC-DCFT) and IFIP Working Group on Dependable Computing and Fault Tolerance (WG 10.4). 2015 was the last year in which the award was based on a DSN accepted paper. The 2015 award was presented to Dmitrii Kuvaiskii for the paper “<math>\Delta</math>-encoding: Practical Encoded Processing,” by Dmitrii Kuvaiskii and Christof Fetzer.</p> <p>The DSN Best Paper Award was awarded for the first time at DSN 2014. In 2015 the award was presented to the paper " Leveraging State Information for Automated Attack Discovery in Transport Protocol Implementations," by Samuel Jero, Hyojeong Lee, and Cristina Nita-Rotaru.</p> <p>Additionally the DSN conference hands out a range of student travel and participation awards to encourage student participation.</p>	
<p><b>Concerns:</b> <i>Share your TC-related concerns with your members.</i></p>	<p>The current process of TMRF is a painful one where the General/Finance Chairs have to learn about it on the fly. As our conferences are often at international locales, the complexities of the TMRF regarding hotel contracts, insurances and registrations keep getting complicated and often the guidance/responses from IEEE are unclear. A clearer guidance from IEEE on (a) core requirements of data and timing and (b) continual changes to the TMRF would be deeply appreciated.</p>	

