

Comité suisse pour l'IFIP

Title: Annual Report IFIP TC 10
Author : Bernhard Eschermann
Period: 2010
Date : December 22, 2010

1. TC 10 Meetings

The 2010 meeting took place in conjunction with WCC 2010 in Brisbane/Australia on September 21, 2010. It was not well attended due to the location and the missing allure of WCC to attract TC 10 participants from Europe and the US.

The 2011 meeting is planned to take place in conjunction with WG10.5's conference DATE (Design, Automation and Test in Europe) that will be held in Grenoble/FR from March 14-18, 2011.

2. TC 10 Officers

Bernhard Eschermann was reelected as TC10 chair for a second term 2011-2013. There is a new chairperson of WG 10.5 from 2010: Dominique Borriore (IMAG, FR) took over from Michel Robert (LIRMM, FR). Apart from that, there were no changes in officers during 2010.

3. TC10 Activities

TC10 - in addition to the conferences of its WGs – had established a conference trying to attract the whole TC spectrum of experts in connection with WCC 2006 in Santiago de Chile. It was called BICC (biologically inspired cooperative computing). A second BICC event was scheduled in conjunction with WCC 2008 in Milan and a third event was organised at WCC 2010 in Brisbane. The number of papers submitted to BICC this time was low (13, out of which 8 were accepted). Due to the discontinuation of WCC for the time being, BICC can not be co-located with WCC in 2012. Thus, BICC is either merged with another conference (e.g. DIPES, SASO) or if not possible it will be terminated.

A discussion on new areas for TC 10 was started at its 2009 meeting. The following topics were identified as potentially interesting to pursue – they were also assigned to current working groups of TC 10 to evaluate and discuss further: Wearable computing (WG 10.2), cloud computing (WG 10.4), „green“ computing (WG 10.5). The progress on these topics is reported in the respective WG chapters.

4. Working Group Activities

4.1 Working Group Composition

The TC consists of four active working groups: *10.2 – Embedded Systems, 10.3 – Concurrent Systems, 10.4 -Dependable Computing and Fault Tolerance, 10.5 - Design and Engineering of Electronic Systems.*

4.2 Working Group 10.2 (Embedded Systems)

The WG 10.2 home-page is located at <http://webserv2.c-lab.de/ifip-wg-102/>

4.2.1 Members

There was no change in membership. Two of the members are from Switzerland: Prof. Lothar Thiele (ETH Zürich) and Dr. Bernhard Eschermann (ABB).

4.2.2 Officers

The officers of WG 10.2 are:

- Wayne Wolf, Chair
- Bernd Kleinjohann, Vice Chair
- Lisa Kleinjohann, Publications Chair

Unfortunately the chair of the WG is not very active and responsive.

4.2.3 Meetings

The following business meeting was conducted by WG 10.2 during the last 12 months:

- ESWeek 2010, Scottsdale AZ, October 2010

4.2.4 Sponsored Events

The following events have been held in the past 12 months:

- DIPES 2010, Sept 20-23 2010, Brisbane
- ESWeek 2010, October 2010, Phoenix AZ

4.3 Working Group 10.3 (Concurrent Systems)

The WG 10.3 home-page is located at: <http://www.ifipwg103.org/>

4.3.1 Members

There have been no new members in 2010 and consequently the working group remains at 59 members. Their geographic distribution is as follows:

- North America: 20 members
- South America: 1
- Europe: 26
- Middle East/Africa: 3
- Asia/Pacific: 9

The Swiss member continues to be Prof. Helmar Burkhart (University of Basel).

4.3.2 Officers

The officers of WG 10.3 are:

- Chair Prof Chris Jesshope
- Vice Chair Prof Erik Maehle
- Vice Chair prof Guang Gao
- Secretary Prof Makoto Amamiya

4.3.3 Meetings

The following business meetings were conducted by WG 10.3 during the last 12 months:

- No face-to-face meetings occurred during this period, all business was conducted electronically. There were face to face meetings of a small committee planning to organise a face-to-face meeting in 2011

4.3.4 Sponsored Events

The following events were held in the past 12 months:

- Europar 2010 was held in Ischia from August 31st to September 3rd, see: <http://www.europar2010.org/>
- NPC 2010 will be held in Zhengzhou, China from September 13th to 15th, 2010, see: [http:// grid.hust.edu.cn/npc2010](http://grid.hust.edu.cn/npc2010).
- PACT 2010 will be held in Vienna, Austria from September 11th to 15th. See <http://pactconf.org/>
- We are sponsoring a new conference this coming year. The Computer Society of Iran (CSI), and the School of Computer Science of the Institute for Research in Fundamental Sciences (IPM-CS), are jointly organizing the 15th symposium on Computer Architecture and Digital Systems CADS2010 in Tehran, Iran. During these days, IPM as a leading research institute with its strong research culture will host researchers, scientists, engineers and practitioners in the fields of computer architecture and digital systems, to exchange their latest research results and findings. It is anticipated that the meeting will gather many people from all around the world.
- CADS 2010 will be held in Tehran, Iran on 23-24th of September 2010 with the following Program Chairs:
 - Nader Bagherzadeh (UC, Irvine)
 - Hamid Sarbazi-Azad (Sharif University)

4.4 Working Group 10.4 (Dependable Computing and Fault Tolerance)

The WG 10.4 homepage is located at <http://www.dependability.org/wg10.4/>

4.4.1 Members

The following persons became members of WG 10.4 in 2009/2010:

- Haruo Yokota (Japan): Tokyo Institute of Technology
< yokota@cs.titech.ac.jp >
- Tomohiro Yoneda (Japan) : National Institute of Informatics
<yoneda@nii.ac.jp>

The following person left the membership of WG 10.4 in 2009/2010:

- Chanda Kintala (US): deceased

As a result, as of today the working group has 68 members. Their geographic distribution is as follows:

- North America: 30 (~ 44%)
- South America: 1 (~ 1%)
- Europe: 28 (~ 42%)
- Asia/Pacific: 9 (~ 13%)

There is no Swiss member of this WG.

4.4.2 Officers

The officers of WG 10.4 remain the same as last year:

- Chair: Rick Schlichting, AT&T Labs-Research, US <rick@research.att.com>
- Vice Chair: Karama Kanoun, LAAS-CNRS, France <karama.kanoun@laas.fr>

4.4.3 Meetings

WG 10.4 held two meetings during the last 12 months. The first was in Ishigaki, Japan in January 2010 and the second was in Chicago, Illinois, US in June/July 2010. Following are details on both meetings.

The 57th meeting of IFIP WG 10.4 was held on the island of Ishigaki, Japan from the evening of January 21, 2010 through lunchtime on January 25, 2010. The hotel where the meeting was held, the Club Med Kabira, is about 40 minutes from the main town and airport, on a bay that is protected by reefs. While the weather was not really suitable for swimming since it was mostly cool, cloudy and sometimes rainy, it was good windsurfing weather and there were often a group of windsurfers on the water. Since this was off-season in Ishigaki, the hotel was relatively quiet, but there were still plenty of activities and lots of good food, 3 buffets a day in fact. On the day off on Sunday, many of the participants went on an all-day excursion that included a water buffalo cart ride on the neighboring island of Taketomi, a

memorable lunch, a cave tour, and the opportunity to participate in weaving or cloth dyeing at a fabric museum. The meeting was organized by Takashi Nanya from the University of Tokyo, and was attended by 17 members and 17 guests for a total of 34 participants. Included in this count are our 3 Japanese emeritus members Yoshi Tohma, Hiro Ihara, and Yoshiaki Koga, who all joined us for dinner on Sunday evening.

The workshop at the 57th meeting was on the theme of dependable operating systems and was organized by Xavier Défago from the Japan Advanced Institute of Science and Technology (JAIST). The program consisted of 14 talks on a variety of topics. Of these, 4 talks were given by WG members and 10 by invited speakers, with many of the latter group associated with the CREST project in Japan funded by the Japan Science and Technology Agency (JST). The workshop wrapup session consisted of talks by Jean Arlat, John Rushby, and Paulo Verissimo offering their observations on issues raised during the course of the workshop. As usual, there was plenty of discussion, both during the workshop itself, and during the breaks and social activities. The workshop was followed on Saturday evening by the WG 10.4 business meeting and on Monday morning by 7 research reports.

The 58th meeting of IFIP WG 10.4 was held in Chicago, Illinois, US from the evening of June 24 through lunchtime on June 27. Unlike most previous meetings associated with the IEEE/IFIP Dependable Systems and Networks Conference (DSN), this one was held before the conference rather than after. This was done primarily to avoid conflicting with the July 4th holiday in the US, but it was also a test to see how the change affected attendance and the dynamics of the meeting. Also unlike most previous summer meetings, this one was held in a city and only a 10 minute taxi ride from the DSN venue. The meeting was hosted by Farnam Jahanian (U. Michigan, US) and Chuck Weinstock (Software Engineering Institute, US), and included a wonderful group dinner at the nearby Bistro 110 restaurant as well as the usual technical sessions. The meeting was attended by 49 persons, including 40 members and 9 guests.

The technical focus of the meeting was a Workshop on Failure Diagnosis organized by Priya Narasimhan (Carnegie-Mellon U., US), Neeraj Suri (TU-Darmstadt, Germany) and Dan Siewiorek (Carnegie-Mellon U., US). There were 10 talks, with 4 being given by WG members and the other 6 by guests; the latter included participants from companies such as Facebook, General Motors, and Microsoft Research, as well as a US government lab and universities. The talks focused on a diverse set of topics in the area of diagnosis, with presentations related to cloud computing, enterprise systems, embedded computing, auto-repair, classic comparison-based diagnosis, and high-performance systems. There was also a wrap-up panel on research challenges in this area, with Dan Siewiorek moderating discussion generated by observations from Brian Randell (Newcastle University, UK), Bill Sanders (U. Illinois, US), Lisa Spainhower (IBM, US), and Chris Walter (WW Technology Group, US). There was also ample "in-line" discussion during the presentation and interesting conversations during the breaks and other social events.

The meeting also included the two other regular features of WG meetings, the WG business meeting and research reports. The business meeting was held on Friday evening after the first day of the workshop and is summarized below and in the

accompanying slides. For research reports, there were 12 reports of 15 minutes each spread across two sessions on Sunday morning.

Two WG 10.4 meetings are planned over the next 12 months. The 59th meeting will be held in Snowmass Village, Colorado, US from January 12-16, 2011, with the hosts being Nick Bowen (IBM, US) and Basil Smith (IBM, US). The technical workshop at the meeting has the title Dependability, Security and Safety Issues for the Smart Part of a Smarter Planet, and will be organized by Nick and Basil.

The 60th WG 10.4 meeting will be held from July 1-4, 2011 near Taipei, Taiwan following the 41st IEEE/IFIP Dependable Systems and Networks Conference (DSN) to be held in Hong Kong, China. The host will be Sy-Yen Kuo (National Taiwan University, Taiwan). At this point, the topic of the technical workshop is open.

4.4.4 Sponsored Events

The main conference sponsorship activity of WG 10.4 is the annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN). This year was the 40th annual meeting, held in downtown Chicago, Illinois, US from June 28 – July 1, 2010. DSN is co-sponsored with the IEEE Computer Society Technical Committee on Dependable Computing and Fault Tolerance (TC-DCFT).

The General Chair of this year's conference was Farnam Jahanian (U. Michigan, US) and the Honorary Chair was John Meyer (U. Michigan, US), both of whom are WG members. Additional members of the organizing committee included:

- Conference Coordinator: David Taylot (U. Waterloo, Canada)
- Program Chair, DCCS: Christof Fetzer, (TU-Dresden, Germany)
- Program Chair, PDS: Mohamed Kaâniche (LAAS-CNRS, France)
- Finance Chair: Michael Bailey (U. Michigan, US)
- Publicity Chair: Jon Oberheide (U. Michigan, US)
- Publications Chair: Kaustubh Joshi (AT&T, US)
- Workshop Co-Chairs: Saurabh Bagchi (Purdue U., US), Mootaz Elnozahy (IBM Research, US)
- Tutorials Co-Chairs: Cristina Nita-Rotaru (Purdue U., US), Andrea Bondavalli (U. Florence, Italy)
- Fast Abstracts Chair: Zbigniew Kalbarczyk (U. Illinois, US)
- Student Forum Chair: Doug Blough (Georgia Tech, US)
- BoF Chair: Robert Swarz (Mitre, US)
- Events Chair: Chuck Weinstock (Carnegie Mellon Univ., US)
- Fund-Raising Co-Chairs: Sy-Yen Kuo (National Taiwan U., Taiwan), Henrique Madeira (U. Coimbra, Portugal), William Sanders (U. Illinois, US)

The chair of the DSN Steering Committee is Takashi Nanya (University of Tokyo, Japan), chair of the TC-DCFT, while the vice-chair is the WG 10.4 chair.

The total attendance at DSN this year was around 260, including 70-75 students. The total was consistent with the attendance at the 2009 conference in Portugal, and continues the healthy trend of the past few years. The conference this year received financial sponsorship from the IEEE TC-DCFT, IFIP TC10, five companies, the

U.S. National Science Foundation (NSF), and the U.S. Department of Homeland Security Cyber Security Research and Development office, with an additional three organizations providing support for operation of the conference. The IFIP TC10 contribution of € 4500 was used to support both student travel awards and the William C. Carter Award (see below).

This year's conference was organized into multiple tracks with different types of contribution formats and selection processes. Highlights include:

- A Workshop and Tutorials day on Monday, June 28. These included:
 - *Workshop on Recent Advances in Intrusion-Tolerant Systems (WRAITS)*, organized by Miguel Correia (U. Lisbon, Portugal), and Partha Pal (BBN Technologies, US).
 - *Workshop on Dependable and Secure Nanocomputing (WDSN)*, organized by Jean Arlat (LAAS-CNRS, France), Cristian Constantinescu (AMD, US), Ravi Iyer (U. Illinois, US), Johan Karlsson (Chalmers U., Sweden), and Michael Nicolaidis (TIMA, France).
 - *Workshop on Proactive Failure Avoidance, Recovery, and Maintenance (PFARM)*, organized by Mirosław Malek (Humboldt U., Germany), Felix Salfner (Humboldt U., Germany), and Kishor Trivedi (Duke U., US).
 - *Workshop on Fault-Tolerance for HPC at Extreme Scale (FTXS)*, organized by John Daly (Dept. of Defense, US) and Nathan DeBardleben (Department of Defense, US).
 - *Network Coding and Wireless Protocols*, a half-day tutorial given by Luiz F. M. Vieira (F.U. Minas Gerais, Brazil) and Antonio A. F. Loureiro (F.U. Minas Gerais, Brazil).
- A Keynote Address, *Availability in the Face of Evolving Internet Threats*, by Danny McPherson, Vice-President of R&D, VeriSign, Inc. (US).
- Presentation of the 2010 IEEE Emanuel R. Piore Award to Nancy Lynch (MIT, US), and an accompanying Keynote Address by Prof. Lynch entitled, *Distributed Computing Theory Through the Ages*.
- The two main tracks, the Dependable Computing and Communication Symposium (DCCS) and the Performance and Dependability Symposium (PDS) featured 64 selectively refereed contributions. Of these, 38 were in DCCS and 26 were in PDS. (See details below.)
- Two Student Forum sessions consisting of 9 student presentations.
- Two Fast Abstracts sessions in which 19 short presentations on late-breaking research results and work-in-progress were given.
- Three “Birds of a Feather” (BoF) sessions:

- *Platform Error Management Strategies to Enable Reliable Networks over Virtualized Infrastructures*, organized by Varun Sethi (Freescale Semiconductor).
 - *The Future of Dependability*, organized by Alan Woods (Sun Labs, Oracle).
 - *Dependability Issues for Smarter Planet Initiatives*, organized by Basil Smith (IBM Research).
- Presentation of the Carter Award, which is sponsored jointly by the IEEE CS TC-DCFT and IFIP WG 10.4, and is designed to recognize student authors of outstanding papers reporting work based on graduate dissertation research accepted in the “regular paper” category of either DCCS or PDS. This year the recipient selected by the DSN Steering Committee was Basel Alomair for the paper "Scalable RFID Systems: A Privacy-Preserving Protocol with Constant Time Identification" (co-authors: Andrew Clark, Jorge Cueller, and Radha Pooverdran).

For DCCS, the 38 papers were selected from 170 full submissions, including 158 regular papers, 9 practical experience reports, and 3 tool descriptions. For PDS, the 26 papers were accepted from 106 full submissions, including 92 regular papers, 11 practical experience reports, and 3 tool descriptions. A new reviewing process was introduced this year for both DCCS and PDS in which all papers were reviewed by three PC members in a first round, with an additional two PC reviews in a second round for the slightly more than half of the papers that had at least one accept recommendation from the first round. External reviews were used for submissions that required expertise not found on the PC. While this two-round reviewing process was approved as a one-year experiment, it was deemed successful enough to continue in future years with a few minor changes. As in previous years, an author response period was also used prior to the PC meeting to allow authors to respond to factual errors and misconceptions in the reviews.

The table below summarizes the paper submissions and acceptances for DSN-2010. As has been the case since the initiation of the conference as the Fault-Tolerance Computing Symposium (FTCS) in 1970, DSN remains a highly selective conference and the premier venue for publishing research results related to highly dependable computing.

Symposium & Conference	Submitted	Accepted	Acceptance Rate
DCCS	170	38	22.4%
PDS	106	26	25.5%
DSN	276	64	23.2%

4.4.5 Events in Cooperation with WG 10.4

The following co-sponsored events without financial involvement have been held in the past 12 months:

- EDCC 2010 (8th European Dependable Computing Conference), Valencia, Spain, April 28-30, 2010.

4.4.6 Planned Events

The 41st DSN conference will be held in Hong Kong, China from June 27-30, 2011. The organizing committee includes the following individuals:

General Chair: Michael Lyu (Chinese U. of Hong Kong, China)
Conference Coordinator: Sy-Yen Kuo (National Taiwan U., Taiwan)
DCCS PC Chair: Saurabh Bagchi (Purdue U., US)
PDS PC Chair: Susanna Donatelli (U. Torino, Italy)

The main structure of the conference will be the same as 2010, with a Workshop and Tutorials day first, followed by 3 days of the main conference. In addition to the DCCS and PDS symposia, we expect to have a student forum, and fast abstracts. Relevant and updated information concerning DSN-2011 can be obtained from <http://www.dsn.org>.

The following venues were decided for future DSN conference at the TC-DCTF business meeting in Chicago:

- 42nd DSN (2012) in Boston, Massachusetts, US, with General Chair Robert Swarz (Mitre, US).
- 43rd DSN (2013) in Budapest, Hungary, with General Chair András Pataricza (Budapest U. of Technology and Economics, Hungary).
- 45th DSN (2015) in Rio de Janeiro, Brazil, with General Chair Eliane Martins (State U. of Campinas, Brazil).

The location for the 44th DSN conference in 2014 remains open at this time.

4.4.7 Special Interest Groups

WG 10.4 has three SIGs. The first, established in 1999, is the SIG on Dependability Benchmarking (SIGDeB), which promotes the research, practice, and adoption of benchmarks for computer-related system dependability. The Chair of this SIG is Karama Kanoun (LAAS-CNRS, France) and the Vice Chair is Lisa Spainhower (IBM, US). The second and third, established in 2009, are the SIG on Concepts and Ontologies organized by Al Avizienis (U. Vytautas Magnus, Lithuania), and the SIG on Education in Resilient Computing organized by Luca Simoncini (U. Pisa, Italy), respectively.

4.5 Working Group 10.5 (*Design and Engineering of Electronic Systems*)

The Working Group 10.5 "Design and Engineering of Electronic Systems" belongs to the IFIP Technical Committee 10, and was established in 1994. The WG 10.5

home-page is located at <http://www.inf.ufrgs.br/ifip10-5>. The main activity of the Working Group is in the frame of the International Conference on Very Large Scale Integration, IFIP-VLSI-SoC.

4.5.1 Members

The following persons became members of WG 10.5 in 2010:

- Prof. Tsui (Chi Ying) from Hong Kong, working on VLSI design. He offers to organize VLSI-SoC in 2011 in Hong Kong,
- Prof. Ian O'Connor from Ecole Centrale de Lyon, France.
- Dr. Matthew Guthaus from University of California Santa Cruz, California. He offers to organize VLSI-SoC 2012 in California.

As a result, as of today the working group has 65 members.

Their geographic distribution is as follows: North America – 17, Europe – 36, Asia / Pacific – 10, South America – 2

There is no Swiss member of this WG.

4.5.2 Officers

The officers of WG 10.5 are:

- Prof. Dominique Borrione (France), Working Group chair
- Prof. Ricardo Reis (Brazil) and Luis Miguel Silveira (Portugal), Vice-chairs
- Prof. Michel Robert (France), Past chair

4.5.3 Meetings

The most recent IFIP WG 10.5 workgroup meeting was organized during VLSI-SOC 2010 in September 2010 Madrid, following a meeting alongside the DATE conference in Dresden on March 9, 2010..

4.5.4 Sponsored Events : <http://www.vlsi-soc.com/>

- **IFIP-VLSI-SoC'10** – 18th International Conference on Very Large Scale Integration, will be held in Madrid, Spain from September 28 to 30, 2010
- General Chair : Pr. David Atienza, EPFL Lausanne, member of the WG 10.5
- Keynotes are fixed. Subhasish Mitra (Stanford), Giovanni de Micheli (EPFL), Sani Nassif (IBM), Nik Dutt (UC Irvine)
- Conference special theme: Green computing
- Two special sessions: 1- Green computing and datacenters, 2- Bioengineering VLSI
- Sponsoring: IFIP 50%, CEDA 25%, CASS 25%

4.5.5 Planned Events

The following main sponsored events are already planned:

- **IFIP-VLSI-SoC'11**

- General Chair : Pr, Chi-Ying Tsui, member of the WG 10.5
- Proposal 17-19 October
- Theme suggestion for conference "SOC design for ubiquitous sensing and computing". To be discussed taking into account TC10 priorities (green electronics).

- **IFIP-VLSI-SoC'12 (Santa Cruz)**

Target 7th or 14th October (avoid last week in September (classes start and hotels expensive)

- Target attendance : 120-on-site + 50 off-site from Silicon Valley