Part 1 – General Assembly

1- Meetings hold and scheduled

The annual TC10 meeting for 2001 was held on September 10, in Pirenopolis, Brazil (near Brasilia), in conjunction with SBCCI’2001 (the 14th Symposium on Integrated Circuits and System Design).
The annual TC10 meeting for 2002 was held on Aug. 29th in Montreal, Quebec, Canada in conjunction with the World Computer Congress 2002.

2- Changes in Officers and Membership

2.1- TC

Franz Rammig from Univ. Paderborn has been elected new chair of TC10. The TC thanks Jean-Claude Laprie for his excellent chairmanship over the last years.
Marco Vanneschi, from University of Pisa wanted to be replaced by another person to represent Italy. Up to now no follower has been nominated.
J. Klamka, Silesian University of Technology, Institute of Automatic Control ul. Akademicka 16, 44-100, Gliwice, POLAND has been nominated as new representative of Poland, replacing R.W. Marczynski.

2.2- WGs

Two members are no longer part of the membership of WG 10.4:
- Tuvia Lamdan <mclamdan@wisdom.weizmann.ac.il>
- Ying Wa Yang <chuang@163bj.com>

Four members were awarded the status of Emeritus member of WG 10.4:
- Algirdas Avižienis <aviz@cs.ucla.edu>
- John F. Meyer <jfm@eecs.umich.edu>
- Brian Randell <brian.randell@newcastle.ac.uk>
- Jan Torin <torin@ce.chalmers.se>

Five new members were admitted to join WG 10.4 this year (alphabetical order):
- Christof Fetzer <christof@research.att.com> - AT&T Research, USA,
- Philip Koopman <koopman@cmu.edu> - Carnegie Mellon University, USA,
- Carl E. Landwehr <clandweh@nsf.gov > - NSF, USA,
- Henrique Madeira <henrique@dei.uc.pt> - University of Coimbra, Portugal,
- Eliane Martins <eliane@ic.unicamp.br> - University of Campinas, Brazil.
Luis Miguel Silveira, from INESC (Portugal), has been approved as new member of WG10.5.

3- Working group activities

The TC consists of four active working groups: 10.1 – CAST, 10.3 – Concurrent Systems, 10.4 - Dependable Computing and Fault Tolerance, 10.5 - Design and Engineering of Electronic Systems

3.1- Working Group WG10.1 CAST -- Computer Aided Systems Theory

Meetings

The next proposed meeting of the Committee will be held in Las Palmas, Gran Canaria, during the week of EUROCAST'2003, February 24-28, 2003. At that meeting it is proposed to have a review of WG10.1 activities, Committee Officers, and membership. Note that this is a different venue, but same time, as previously indicated in a previous report.

Sponsored events

The main activity in the last 12 months has been the IEEE TC-ECBS and IFIP WG10.1 3rd Joint Workshop on Formal Specifications on Computer-Based Systems, held in Lund, Sweden, on April 10-11, 2002; this partially overlapped with the main IEEE ECBS'2002 Conference. From the submitted abstracts 12 talks were chosen and presented; because of illness one talk took the form of a tele-conference from the USA. All received abstracts were published in a proceedings (ISBN 1-85-769169-5, University of Stirling) and copies are available from the WG10.1 chairman). The presentations were of a very high standard and selected full papers are expected to be published in a suitable journal (currently under negotiation).

A 4th Workshop is expected to take place in Huntsville, USA. at the time of the 10th IEEE TC-EBCS Int'l Conference and Workshops of Computer-Based Systems (ECBS'2003). Our Workshop is, of course, subject to approval and final agreement with the organisers of ECBS'2003. Planning is underway for a number of conferences/workshops/long and short-stay visitors during 2004 in Stirling, Scotland. Among these activities will be WG10.1-related workshops.

The WG10.1 Chairman should welcome contact with other TC10 groups who might be interested in holding meetings, workshops, or just visiting during 2004.

Changes of membership

No changes in membership during the report period.

Officers

No changes concerning officers during the report period.
3.2 WG 10.3 (Concurrent Systems)

Meetings

This year, WG 10.3 has started a series of e-meetings for convenient and frequent communication among the Working Group members. We have so far had three WG 10.3 e-meetings

- on January 24,
- March 14,
- July 18, 2002.

E-meetings of this kind enable participants to share the screen of their computer with others and make live presentations, watch one another through Web Cams, and/or participate in voice communication through a telephone conference going on at the same time. We had a number of technical difficulties initially but they were later overcome. Also, it has been discovered that (depending on the time of the year) a meeting time in the late afternoon in New York is suitable for most members, such that many time zones can be covered in a single meeting.

While many of the ideas that were discussed during the e-meetings are still in the formation/brainstorming stage, it may be worthwhile mentioning some of them in the present report to give an idea about the directions WG 10.3 is exploring:

Increasing focus on emerging, strategically important areas of research (grid, ubiquitous computing, power aware designs, ...)

Organizing new international conferences (e.g., members Guang Gao and Kemal Ebcioglu is working on organizing a parallel computing conference in Beijing in December 2003, to be sponsored by IFIP WG 10.3 and the Chinese Academy of Sciences).

Creating vision statements/white papers on topics of interest in concurrent systems, acting like an "international academy of science."

Recruiting world class researchers to the working group.

Sponsored events

PACT (Parallel Architectures and Compilation Techniques) was organized in 2001 for the 9th year in a row. There were 211 total attendees, a record for PACT (146 attended the main conference itself). PACT 2001 was sponsored equally by WG 10.3, the IEEE Computer Society, and ACM. PACT 2001 took place in Barcelona, Spain (http://www.ac.upc.es/pact01). The program chairs were Prof. John Shen (Intel) and Prof. Todd Mowry (Carnegie-Mellon University); the general chair was Prof. Mateo Valero (Univ. Politecnica de Catalunya, Barcelona, Spain). The PACT 2001 technical program was of high quality: 126 papers were submitted out of which 26 were accepted. The program featured high profile keynote speakers from IBM, Intel and Compaq.

This year's PACT (http://www.pactconf.org) will take place between September 22 and 25, 2002, in Charlottesville, Virginia, USA. IFIP TC 10 has provided a student travel grant for this conference, to be given to students from developing countries.

In-cooperation events
WG 10.3 has been recently associated with the following conferences:

**Euro-Par 2001** (http://europar.man.ac.uk/) was held in Manchester, UK between August 28 and 31, 2001, under the chairmanship of Prof. John Gurd and Prof. W.T. Hewitt. The conference was attended by 227 participants. IFIP WG 10.3 member Guang Gao was the global chair for the Instruction Level Parallelism and Architecture track, and WG 10.3 member Tony Hey was a keynote speaker. There were 207 submissions from 38 countries, out of which 70 regular papers and 40 research notes were accepted.

**Euro-Par 2002** will take place in Paderborn, Germany, August 27-30, 2002.

**SBAC-PAD 2001**, the 13th Symposium on Computer Architecture and High Performance Computing, was held in the Pousada dos Pireneus Resort Hotel, Pirenopolis, Brazil, between September 10 to 12, 2001 (http://tucupi.ctepinc.br/~sbac2001/english/). The program included WG 10.3 members Jean-Luc Gaudiot as a keynote speaker, and also Jack Dongarra, Guang Gao, Nader Bagherzadeh, Siang W. Song, Claude Girault, Bertil Folliot, and Jean Luc Gaudiot as program committee members.

**SPAC-PAD 2002** will be held in Vitoria/Espirito Santo, Brazil between October 28 and 30, 2002 (http://www.inf.ufes.br/sbac2002/).

**The International Workshop on Cluster Computing (IWCC 2001)**, http://www.infoiasi.ro/~iwcc2001/ was held in Mangalia, Romania (a resort city on the Black Sea coast), between September 1 and 6, 2001. The organizers included Prof. Bertil Folliot (IFIP WG 10.3 member). The workshop proceedings are now available from Springer: http://link.springer.de/link/service/series/0558/tocs/t2326.htm. The workshop is being held bi-annually, with the next one being tentatively planned for 2003.

WG 10.3 also has added two new conference to IFIP WG 10.3's repertoire, using a proactive "conference recruiting" approach (i.e. they went to the conferences and offered tentative sponsorship without waiting for them to ask).

**International Conference on High Performance Computing (HiPC 2002)**, http://www.hipc.org/hipc2002 will be held in Bangalore, India between December 18 and 21, 2002. This is a high quality conference from a developing country that brings together Indian and international scientists, and is interesting to WG 10.3 not only from the point of the subject research areas, but also from the viewpoint of IFIP's international ideals for promoting IT research in developing countries. A WG 10.3 member Michel Cosnard is the architecture track program vice chair, and the program committee includes Tony Hey, Makoto Amamiya, and Kemal Ebcioglu.

**International Conference on Architecture of Computing Systems (Trends in network and pervasive computing)**, was held in Karlsruhe, Germany, April 8-12, 2002 (http://www.uni-karlsruhe.de/~arcs02/). This conference originally was a Germany-only conference, but this year they have gone international and have focused on emerging, important topics, such as internet infrastructure, grid computing, network computing, pervasive computing, which are areas where
WG 10.3 is trying to increase emphasis. I was among the program committee and was impressed by the range of topics and quality of the papers.

**Changes of membership**

No changes in membership during the report period.

**Officers**

No changes concerning officers during the report period.

**Home-Page**

WG 10.3 continues to have an IFIP WG 10.3 Web page http://parallel.vub.ac.be/~efdirkx/ifip_10_3.html, which has been updated by Prof. Erik Dirkx.

### 3.3 WG 10.4 (Dependable Computing and Fault-Tolerance)

**Meetings**

Two regular meetings (41st and 42nd) and the third edition of the *International Conference on Dependable Systems and Networks* (co-sponsored with the Technical Committee on Fault-Tolerant Computing of the IEEE Computer Society) have been held during the period. The program of regular meetings is usually composed of one (or two) topical workshop(s) on specific themes, a research report session and a business meeting of the WG.

**Forty-first Meeting**, January 4-8, 2002

The 2002 winter meeting was held in Saint John, VI, USA, and was hosted by Charles B. Weinstock (SEI-CMU, Pittsburgh, PA, USA). Attendance was composed of 19 members, plus 13 guest observers or speakers.

**Forty-second Meeting**, June 27-July 1, 2002

The 2002 summer meeting was held in Hilton Head Island, SC, USA (near Savannah, GA, USA), and was hosted by Jaynarayan H. Lala. (DARPA, Arlington, VA, USA). Total attendance was 45, including 27 members and 18 guest observers or speakers.

The plans for the four upcoming WG Meetings are as follows.

- **43rd meeting** (winter 2003): The meeting will take place in Cape Verde Islands on January 3-7, 2003.
- **44th meeting** (summer 2003): Monterrey, CA, USA.
- **45th meeting** (winter 2004): The meeting will be held in Moorea Island (French Polynesia).
- **46th meeting** (summer 2004): This meeting will take place in Sienna, Italy (right after DSN-2004 in Forence, Italy). Tentative dates are July 2-July 6, 2004.

**Sponsored events**

*The International Conference on Dependable Systems and Networks (DSN)*

The third edition of the *International Conference on Dependable Systems and Networks (DSN-2002)* took place in Washington, DC, USA, June 23-26, 2002. DSN-2002 represents the continuation of over three decades of tradition in the field of dependable computing. In 2000, two
established conferences, the IEEE International Symposium on Fault-Tolerant Computing (FTCS) and the IFIP Working Conference on Dependable Computing for Critical Applications (DCCA), were combined. This year, another major symposium, the IEEE International Performance and Dependability Symposium (IPDS), was brought under the DSN umbrella.

The series is co-sponsored by IEEE CS TC-FTC and IFIP WG 10.4. This year’s edition was supported by DARPA, LAAS-CNRS, and University of Michigan.

General Chair: Jaynarayan H. Lala, DARPA, Arlington, VA, USA.
Program Committee co-Chairs: Jean-Charles Fabre, LAAS-CNRS, Toulouse, France, Farnam Jahanian, The University of Michigan at Ann Arbor, USA.

Ex Officio (IEEE CS TC-FTC and IFIP WG 10.4 Chairs):
William H. Sanders, Univ. of Illinois, Urbana-Champaign, USA,
Jean Arlat, LAAS-CNRS, Toulouse, France.

International Performance and Dependability Symposium Program co-Chairs:
- Sachin Garg, Avaya Inc., USA,
- Zbigniew Kalbarczyk, University of Illinois at Urbana-Champaign, USA.

The conference was well attended (340 participants), which confirms and further the increase observed since the first edition of DSN.

As is usual now since 1997, the Carter Award (sponsored both by the IEEE CS TC-FTC and IFIP WG 10.4) was presented to an outstanding paper based on a graduate dissertation submitted in the “regular paper” category. This year John De Vale, Carnegie Mellon Univ., Pittsburgh, PA, USA, was the recipient for the Award for the paper entitled: Robust Software — No More Excuses (DeVale and Koopman).


Conference Chair: Charles B. Weinstock, DARPA, Arlington, VA, USA

DSN-2004 will take place in Florence, Italy, June 28-July 1, 2004. Conference Chair: Luca Simoncini, CNUCE-CNR, Pisa, Italy

DSN-2005 will take place in Yokohama, Japan in June 2005; the Conference Chair will be Takashi Nanya (The University of Tokyo, Japan).

Special Workshop on Dependable Computing as part of WCC-2004
During the last business meeting of the WG, Jean-Claude Laprie (LAAS-CNRS, Toulouse, France and WCC-2004 General Chair) reported on the preparation of the 18th IFIP World Computer Congress to be held in Toulouse, France, the last week of August 2004. In particular, he put forward the proposal to organize a Special Workshop on Dependability in honor of Prof. Algirdas Avižienis (UCLA, USA and University of Vilnius, Lithuania) for his pioneering role in the domain of fault-tolerant and dependable computing, and also his decisive role in the launching of WG.10.4. In particular, it was recalled that the preparation of the proposal made together with Alain Costes (LAAS-CNRS, Toulouse, France) to TC 10 for the establishment of WG 10.4 took place in Toulouse, in the late seventies. Accordingly, it was felt that Toulouse and the framework of IFIP WCC-2004 would be appropriate location and occasion for such a celebration.
In substance, the idea is to have a one or two-day event including invited talks only, covering the various facets of dependable computing. The Workshop would be co-Chaired by Jean-Claude Laprie and Alain Costes. This proposal received a strong support from the members present and thus was adopted.

In-cooperation events

During the period covered by this report, the WG 10.4 also provided “in cooperation” support for the following events:


The WG is supporting the following forthcoming events:


Special Interest Groups

The IFIP WG 10.4 Special Interest Group on *Dependability Benchmarking* (SIGDeB) whose foundation followed the Workshop on that topic held during the 36th WG meeting was established in the fall of 1999. The (founding) leading team:

- **Prof. Philip Koopman**, Carnegie Mellon University, Pittsburgh, PA, USA — Chair
- **Prof. Henrique Madeira**, University of Coimbra, Portugal — Vice Chair

have been recently replaced by a new team as follows:

- **Karama Kanoun**, LAAS-CNRS, Toulouse, France — Chair <karama.kanoun@laas.fr>
- **Lisa Spainhower**, IBM, Poughkeepsie, NY, USA — Vice Chair lisa@us.ibm.com
The SIGDeB currently gathers about fifteen regular members. Besides it is desired to keep membership reasonably small so as to have a manageable core group that will get things done, the objective is to extend the membership towards participants from industry in the domains of process control application and embedded systems.

This year highlight for SIG activities was the organization of the Workshop on Dependability Benchmarking under the DSN-2002 umbrella (see Section 0). The format of the Workshop and the exposure of these topics to a large audience (about 50 attendees) allowed many fruitful discussions and exchanges of viewpoints, in particular concerning the role that fault injection could play as part of dependability benchmarks and the related limitations.

**Changes of membership**

Two members, whose personal activities and interest have departed from the main theme of the WG, as reflected by their long absence to the WG meetings, are no longer part of the membership:
- **Tuvia Lamdan** <mclamdan@wisdom.weizmann.ac.il>
- **Ying Wa Yang** <chuang@163bj.com>

Four members were awarded the status of *Emeritus* member of the WG:
- **Algirdas Avižienis** <aviz@cs.ucla.edu>
- **John F. Meyer** <jfm@eecs.umich.edu>
- **Brian Randell** <brian.randell@newcastle.ac.uk>
- **Jan Torin** <torin@ce.chalmers.se>
All four were delighted for having been awarded this status.

Finally, five new members were admitted to join the WG this year (alphabetical order):
- **Christof Fetzer** <christof@research.att.com> - AT&T Research, USA,
- **Philip Koopman** <koopman@cmu.edu> - Carnegie Mellon University, USA,
- **Carl E. Landwehr** <clandweh@nsf.gov> - NSF, USA,
- **Henrique Madeira** <henrique@dei.uc.pt> - University of Coimbra, Portugal,
- **Eliane Martins** <eliane@ic.unicamp.br> - University of Campinas, Brazil.

WG 10.4 now has 60 members with the following geographical distribution:

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<th>Region</th>
<th>Members</th>
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<td>North America</td>
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<td>Asia / Pacific</td>
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<td>South America</td>
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</table>

Academia vs. Industry & Government Agency Distribution:
- Academia: 44 (73 %)
- Industry & Government Agencies: 16 (27 %)

**Officers**

No changes have been reported.
3.4- WG10.5 – Design and Engineering of Electronic Systems

Meetings

Four regular meeting have been held in the last 12 months:
   September 10th, 2001 - Pirenópolis, Brazil, concurrently with SBCCI
   December 5th, 2001 - Montpellier, France, concurrently with VLSI-SoC
   March 4th, 2002 – Paris, France, concurrently with DATE
   June, 12th, 2002 – Las Vegas, USA, concurrently with DAC

Next meeting is scheduled for Montreal, in August, during the IFIP World Congress and the WG-sponsored DIPES workshop.

Sponsored events

The *VLSI-SoC conference* has been successfully organized in Montpellier, France, from December 5th to 8th, 2001. The conference had more than 120 attendees. Three keynote speakers gave invited talks on relevant topics. 70 papers have been selected for presentation. The best conference papers, already selected by the Programme Committee, have been included in a book to be published by Kluwer in 2002.

The *CHARME'2001 - Working Conference on Correct Hardware Design and Verification Methods*, sponsored by the WG and organized by SIG-CHARME, has been successfully organized in Livingston, Scotland, from September 4th to 7th, 2001. Proceedings have been published by Springer-Verlag, under Lecture Notes Volume 2144.

The *DIPES'2002 – Workshop on Distributed and Parallel Embedded Systems*, sponsored by the WG and organized by SIG-ES, will be held in August 2002, as a special track of the IFIP World Congress in Montreal, Canada.

In-cooperation events

The *FDL'2001 - Forum on Design Languages*, was held in Lyon, France, in September 2001. It has been organized by ECSI and co-sponsored by WG 10.5. Papers have been published on a CD-ROM, and best papers will be selected for a future book.

The *SBCCI'2001 - Symposium on Integrated Circuits and Systems Design*, was held in Pirenopolis, Brazil, in September 2001. It has been organized by SBC – Brazilian Computer Society and co-sponsored by WG 10.5. The proceedings have been published by IEEE Computer Society Press.

*IP-BASED DESIGN, the International Workshop on IP-based Synthesis and SoC Design*, has been held in Grenoble, France, from December 9th to 11th 2001. It has been organized by INPG and Design & Reuse and co-sponsored by WG 10.5. Proceedings have been published by the local organizers and distributed to the participants.
Special Interest Groups

The creation of a Special Interest Group on "Formal Design and Verification Methods for Correct Hardware-like Systems" (SIG-CHARME) has been approved after consideration on the regular meeting in Montpellier, subsequent electronic discussion, and final formal approval at the regular WG meeting in Paris. The creation of SIG-CHARME has been submitted to TC10 for consideration. The first SIG chair shall be Steve Johnson, from Indiana University, who is an active WG 10.5 member.

A Special Interest Group on Embedded Systems (SIG-ES) is being created. It will be jointly sponsored by IFIP Working Groups 10.3, 10.4, and 10.5 under the organizational umbrella of WG 10.5. This SIG has been first proposed in October 2000. It will be responsible for the organization of the DIPES conference - "Distributed and Parallel Embedded Systems". The current chair is Bernd Kleinjohann (C-Lab, Germany). This SIG still has to go through the WG analysis and approval.

Changes of membership

Luis Miguel Silveira, from INESC (Portugal), has been approved as new member during the regular meeting in Paris.

The WG has now 65 members, with the following distribution:

- North America - 22
- Europe - 32
- Asia / Pacific - 9
- South America - 2

Aims and scope

The WG is re-discussing its Aims and considering the definition of its Scope, which was never formally approved. The new proposal for the Aims is as follows:

- Electronic system design demands a tight integration on a very large profile of knowledge and skills ranging from system architecture to semiconductor physics.
- Functionality of complex embedded or stand-alone systems, to be applied in areas such as general-purpose computing, telecommunications, automotive, entertainment, and multimedia, may be realized by various combinations of analog and digital hardware and software parts.
- Systems can be implemented by single or multiple integrated circuits that can be either of special purpose, programmable or reconfigurable.
- The working group aims at providing a forum amongst creative experts to explore problem areas and solutions for the design of such complex electronic systems and also disseminating the solutions to a broader industrial and educational sphere.

A proposal for the Scope resulted from a survey on research interests of the WG members and includes following topics:
New activities

The WG is considering the launching of several new activities:
- The organization of an IFIP roadmap on design technologies, or the contribution to roadmaps of other organizations, such as ITEA, MEDEA and ITRS.
- The organization of a PhD forum gathering students from all continents. Its first edition could be held concurrently with VLSI’2003, in Darmstadt, Germany.
- The organization of a workshop for discussing the impact of new design technologies on Computer Science and Engineering curricula. The results of this workshop could represent a WG contribution to road mapping efforts.

These and other new initiatives should give to WG 10.5 a relevant role in the international scenario, for instance:
  a) by coordinating national initiatives and stimulating international cooperation, without competing with national societies that are members of IFIP;
  b) by organizing activities in niches where there is no competition with other societies (examples are the DIPES and CHARME conferences);
  c) by organizing workshops on hot and speculative topics, that are not covered by other events. These workshops should constitute the main goal of the WG meetings. They could result in books, showing the view of the WG experts on subjects that are relevant for future research and industry development; and
  d) by organizing new types of activities on an international basis. Examples are the PhD forum, as well as tutorials from experts and summer schools, eventually organized in different regions of the world.

Officers

Officers have not changed in this period. Chair is Flávio R. Wagner (UFRGS, Brazil), who has been elected at the regular meeting on March 12th, 2001. Three vice-chairs represent the three continents – Nikil Dutt (Irvine, USA), Masaharu Imai (Osaka University, Japan), and Eugenio Villar (Univ. of Cantabria, Spain).

Home-page

The WG 10.5 home-page is located at http://www.inf.ufrgs.br/ifip10-5/real-index.html
4- TC meeting attendance statistics

The record of TC meeting attendance is given as an annex.

Part 2 – Technical Assembly
# Annex: Attendance to TC10 meetings

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1: 1987 – Rochester
2: 1988 – Munich
3: 1989 – San Francisco
4: 1990 – Paris
5: 1991 – Toulouse
6: 1992 – Lyngby
7: 1992 – Madrid
8: 1993 – Manchester
9: 1994 – Johannesburg
10: March 1995 – Munich
11: Sep. 1996 – Canberra
12: Aug. 1997 – Gramado
13: Sep. 1998 – Budapest
14: Aug. 1999 – Toulouse
15: Aug. 2000 – Beijing
16: Sep. 2001 – Pirenopolis
17: Aug. 2002 - Montreal