

IFIP General Assembly, Daejeon (Korea), 9–10 October 2015

TC1 “Foundations of Computer Science” Activity Report

Jacques Sakarovitch, TC1 chair

1 TC1 News

Another founding member of TC1 has passed away in this year: Josef F. Traub on 24 August 2015. An obituary written by WG 1.1 Chair Pr. Art Werschultz has been published in IFIP News of September 2015.

New members

1. Christian Schaerer (Asuncion) for CLEI (several countries of Latin America), in replacement of Ricardo Baeza-Yates
2. Georg Moser (Innsbruck), new WG 1.6 Chair
3. Alberto Marchetti-Spaccamela (Roma), B-member nominated by EATCS

Business meeting

In 2015 TC1 had two business meetings: the first one in London (UK) colocated with ETAPS 2015 with 10 attendees and the second one in Kyoto (Japan), colocated with ICALP-LICS 2015 with 8 attendees.

Working Groups

The list and the activity reports of the ten working groups of TC1 is to be found at Appendix A.

Chair election

My term as TC1 Chair was ending on 31 December 2015. After nomination by a number of TC1 members, I was running for a second term and there has been no other candidates. An electronic election was held in the second half of June and I was elected for a second term: 1 January 2016 to 31 December 2018.

Secretary

TC1 is still missing a secretary.

2 Key points

2.1 IFIP Event policy

At the business meeting in Rome in September 2014, the main point in discussion has been the question of the organisation of at least one IFIP Event every year by every Working Group. This policy is not so obvious or easy to enforce as in most cases the IFIP WG is not the only party organising the corresponding workshop. It has thus not

been adopted yet by all WGs. But for the first time this year, WG 1.02 and WG 1.05 have turned their workshops, DCFS and AUTOMATA respectively, in an IFIP Event and they plan to continue to do so.

2.2 Working Group administration

After many attempts of contact and many mails without any answer, it has appeared that WG 1.4 ‘Computational Learning Theory’ is not functioning anymore, and since already many years. TC1 has thus decided to propose to the TA to suppress this Working Group.

2.3 Connection with EATCS

In order to foster connection and cooperation with EATCS, it has been decided in the last business meetings to have a B-member who will represent EATCS in TC1. EATCS has agreed and nominated Alberto Marchetti-Spaccamela (Roma).

2.4 Preparation of the next TCS Conference

Although TCS 2014, held in Rome in September 2014 and colocated with the CONCUR conference, has been rather successful, it appeared in the discussions that TC1 should do something else than organising another conference which will add to the numerous conferences in the field and try organising a more specific event.

It has been decided at London business meeting to launch the idea of a federated conference gathering several workshops organised by several Working Groups. Luis Barbosa has written a memo on the subject (*cf.* Appendix B) and the discussion is going on.

Appendix A

Reports from Working Groups

The list of Working Groups of TC1, with their chairs, vice-chairs and secretaries as on 1 June 2015, is established as follows.

Georg Moser and Ugo Dal Lago have been appointed chair and secretary of WG 1.08 on 1 January 2015.

		WG Chairs/Vice-Chairs		WG Secretaries	
1.01		Continuous Algorithms and Complexity	Arthur Werschulz agw@dsm.fordham.edu	Anargyros Papageorgiou	ap@cs.columbia.edu
1.02		Descriptional Complexity	Giovanni Pighizzini pighizzini@di.unimi.it	Andreas Malcher	andreas.malcher@informatik.uni-giessen.de
			Helmut Jürgensen		
1.03		Foundations of System Specification	Till Mossakowski till.mossakowski@iws.cs.uni-magdeburg.de	Christine Choppy	christine.choppy@lipn.univ-paris13.fr
1.04		Computational Learning Theory			
1.05		Cellular Automata and Discrete Complex Systems	Jarkko Kari jkari@utu.fi	Nicolas Ollinger	nicolas.ollinger@univ-orleans.fr
1.06		Term Rewriting	Georg Moser georg.moser@uibk.ac.at	Ugo Dal Lago	dallago@cs.unibo.it
1.07		Theoretical Foundations of Security Analysis and Design	Pierpaolo Degano degano@di.unipi.it	Riccardo Forcardi	focardi@dsi.unive.it
			Véronique Cortier cortier@loria.fr		
1.08		Concurrency Theory	Iliaria Castellani ilaria.castellani@inria.fr	Mohammad Reza Mousavi	m.r.mousavi@hh.se
1.09	2.15	Verified Software	Gary Leavens leavens@eecs.ucf.edu		
1.10		String Algorithms & Applications	Costas Iliopoulos costas.ilopoulos@kcl.ac.uk	Bill Smyth	smyth@mcmaster.ca

The term of Prof. Till Mossakowski terminates at the end of 2015. Prof. Markus Roggenbach (Swansea, UK) and Prof. Lutz Schröder (Erlangen, Germany) have been elected Chair and Vice-Chair of WG 1.03 for the term 2016–2018.

The term of Prof. Jarkko Kari terminates at the end of 2015. Prof. Pedro P.B. de Oliveira (São Paulo, Brazil) has been elected Chair of WG 1.05 for the term 2016–2018.

The disbanding of WG 1.04 has been decided and will be proposed at TA.

WG 1.02 — Descriptive Complexity

Chair Prof. Giovanni Pighizzini, Università degli Studi di Milano, Italy

Vice-Chair Prof. Helmut Jürgensen, University of Western Ontario, London, Canada

Secretary Dr. Andreas Malcher, Universität Giessen, Germany

Home page: www.informatik.uni-giessen.de/ifipwg1.2

2014 BRIEF ACTIVITY REPORT

Meetings of WG in 2014

A formal WG 1.2 meeting was held on August 6, 2014, on the occasion of DCFS 2014 - International Workshop on Descriptive Complexity of Formal Systems, Turku, Finland, August 5-8, 2014.

The next formal WG 1.2 meeting will be held on the occasion of DCFS 2015 - International Workshop on Descriptive Complexity of Formal Systems, Waterloo, Ontario, Canada, June 25-27, 2015.

Changes in WG Membership

No changes during 2014

Events related to the Working Group in 2014

* DCFS 2014: International Workshop on Descriptive Complexity of Formal Systems, Turku, Finland, August 5-8, 2014.

The workshop has been organized by Alexander Okhotin (University of Turku). The scientific part was consisting of 4 invited lectures and 27 regular contributions, selected by a program committee after a standard reviewing process. The Program Committee co-chairs were Helmut Jürgensen, Juhani Karhumäki, and Alexander Okhotin. The proceedings have been published on LNCS series. A special issue of the journal Theoretical Computer Science, devoted to extended versions of selected papers is underway. More than 60 participants attended the workshop. Many of them are members of the WG.

* NCMA 2014: Workshop on Non-Classical Models of Automata and Applications, Kassel, Germany, July 28-29, 2014

* CIAA 2014: Conference on Implementation and Application of Automata, Gießen, Germany, July 30–August 2, 2014

* DLT 2014: Conference on Developments in Language Theory, Ekaterinburg, Russia, August 26–29, 2014

Planned Events in 2015

* IFIP Workshop DCFS 2015: International Workshop on Descriptive Complexity of Formal Systems, Waterloo, Ontario, Canada, June 25–27, 2015.

The workshop is organized, under supervision of the DCFS steering committee, by Jeffrey Shallit, who is to be the co-chair of the Program Committee together with Alexander Okhotin.

Publications in 2014

* Proceedings of the 16th International workshop Descriptive Complexity of Formal Systems, DCFS 2014 (Helmut Jürgensen, Juhani Karhumäki, and Alexander Okhotin, editors), Lecture Notes in Computer Science 8614, Springer, 2014.

* Special issue of the International Journal of Foundations of Computer Science, devoted to selected papers from DCFS 2015 (Helmut Jürgensen and Rogerio Réis, guest editors), vol. 25, issue 7, World Scientific, 2014.

WG 1.03 — Foundations of System Specification

Chair Prof. Till Mossakowski, Universität Magdeburg, Germany

Secretary Prof. Christine Choppy, Université Paris 13, France

Home page: ifipwg13.cs.ovgu.de

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WG 1.3 member structure

Europe: 1 BE, 9 DE, 2 ES, 3 FR, 5 IT, 3 NL, 2 PL, 1 PT, 9 UK

Africa: -

Asia: 1 JO

Australia: 2 AU

America: 1 AR, 1 BR, 1 CA, 2 US

Total: 43

meetings of WG 1.3

- Theddingworth (UK), January 7-10, 2014
attended by 14 members, 7 observers, 1 young researcher, 1 local researcher
- Sinaia (Romania), Sept 8-9, 2014
10 members, 4 observers, 1 young researcher, 3 local researchers
- Nijmegen (The Netherlands), June 27, 2015
23 members, 4 observers, 1 young researcher

planned meetings

- The next meeting will be held jointly with ETAPS in Eindhoven, on Mar 30 afternoon and April 1, 2016.
- The subsequent meeting will be organised by Mohamed Bettaz in Jordan in early April 2017.

sponsored conferences

Conference on Algebra and Coalgebra in Computer Science (CALCO)

CALCO 2015 in Nijmegen (The Netherlands), June 24-26

CALCO 2015 received 46 submissions, accepted 21. It was attended by 68 delegates.

It was for the first time co-located with MFPS.

Altogether, co-location has been considered as a great success, and it shall be continued.

The next CALCO 2017 could be organised in Erlangen-Nürnberg.

International Workshop on Coalgebraic Methods in Computer Science (CMCS) CMCS 2014, Grenoble (France), April 5-6

The post-proceedings including selected revised papers are to be finalised soon. Some pre-prints are already available online

CMCS 2016 will also be joint with ETAPS in Eindhoven, on April 2-3, 2016.

Workshop on Algebraic Development Techniques (WADT)

WADT 2014 in Sinaia (Romania), September 4-7

Co-organised by Razvan Diaconescu, Mihai Codrescu, Ionut Tutu

30 talks, 29 participants

WADT 2106 will take place in Gregynog (Wales), around Septemer 19, 2016

International colloquium on graph theory and combinatorics (ICGT)

ICGT 2014 in Grenoble (France), June 30-July 4

It was held within STAF (ex-TOOLS) and well-attended.

ICGT 2016 will again be held within STAF.

further sponsored activities

DOL

The Distributed ontology, modeling and specification language (DOL) is being standardized at OMG. DOL contains many elements of CASL, which has been developed by members of WG 1.3 and has been approved by WG 1.3.

The proposal will be open for comments starting June 30, on

<https://github.com/tillmo/DOL> until Aug 22, 2015.

WG 1.05 — Cellular Automata

Chair Prof. Jarkko Kari, Turku University, Finland

Secretary Prof. Nicolas Ollinger, Marseille University, France

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The Working Group met during the 20th International Workshop on Cellular Automata and Discrete Complex Systems (AUTOMATA 2014) in Himeji, Japan, on July 7-9:

<http://www.eng.u-hyogo.ac.jp/eecs/eecs12/automata2014/>

AUTOMATA is the main activity of the working group and the annual meeting point of its members. This time, the workshop program consisted of three invited talks, and presentations of 10 full papers and 11 exploratory papers. The invited and full papers will be published in LNCS 8996 proceedings book by Springer.

The WG meeting took place on July 8 and was attended by 10 members of the group. The meeting discussed plans for AUTOMATA 2015 in Turku, Finland. It was also decided that AUTOMATA 2016 will be organized in Zürich, Switzerland, by Matthew Cook and Turlough Neary from the Institute for Neuroinformatics (Univ. Zürich and ETH Zürich). The full minutes of the meeting are attached below.

Jarkko Kari, Chair of WG 1.5

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Meeting of IFIP WG 1.5

Tuesday July 8, 2014, at 17:15

Members of the WG who were present:

Kari, de Oliveira, Poupet, Umeo, Morita, Nishio, Kutrib, Imai, Peper, Worsch

TOPICS

1. The WG chairman thanked the organizers of AUTOMATA 2014 for their work.

2. AUTOMATA 2015

Jarkko Kari presented his plan for the conference in 2015. He will organize it together with Törmä and Szabados in Turku. Planned dates:

submission: February 9

notification of acceptance: March 17
final versions: March 27
conference: June 8-10

venue: Turku University

estimated fee for early registration: 250 Euro, for students maybe
150 Euro

The organizers will try to have the proceedings of the full papers
published in LNCS. For exploratory papers a technical report is
planned.

There were no objections to these plans.

3. AUTOMATA 2016

Matthew Cook and Turlough Neary from the Institute for
Neuroinformatics (Univ. Zürich and ETH Zürich) have been asked
whether they want to organize AUTOMATA 2016 and agreed.

No further details have been fixed until now, but there were no
objections to this plan.

There is also an offer by Alberto Dennunzio to organize AUTOMATA
2017 in Italy.

4. IFIP matters

The biannual TCS conference organized by IFIP TC1 will take place
in Rome, September 1-3.

All WG 1.x (chairs) have been asked to give an invited talk.
Currently nothing has been decided for WG 1.5.

For the future there is a plan to organize the TCS conference as a
federated event of WG conferences. Since no details are known until
now, it is hard to have an opinion. But it is clear that WG 1.5
will go to Zürich in 2016; so, if at all, WG 1.5 could participate
for the first time in 2018.

5. WG matters

The organizer of AUTOMATA 2014, T. Isokawa, has been proposed as a
new member of WG 1.5 and there were no objections.

The present chairman reminded the the WG that at the WG meeting at
AUTOMATA in Turku in 2015 a new chairman has to be elected.

WG 1.06 — Term Rewriting

Chair Prof. Georg Moser, Innsbruck University, Austria

Secretary Dr. Ugo Dal Lago, Bologna University, Italy

Home page cbr.uibk.ac.at/ifip-wg1.6/

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News

* The next meeting of the IFIP WG 1.6 will be held at RDP 2015 in Warsaw, Poland on Sunday, June 28, 2015.

* After successfully chairing the working group for the last six years, Jürgen Giesl stepped down as chair; also Hans Zantema stepped down as vice-chair, and Peter Schneider-Kamp as secretary.

* New chair is Georg Moser; new secretary is Ugo Dal Lago.

* The website of the working group has a new address:
<http://cbr.uibk.ac.at/ifip-wg1.6/>

* Next summer school: The 7th International School on Rewriting will be held in Leipzig, Germany from August 10 to August 14.

Activities

The central goal of the working group is the promotion and orchestration of all efforts on research in rewriting. Typically this is understood through the role of the working group as think tank for its main conference RTA, as well as the (usually) bi-annual organisation of the International Summer School on Rewriting. The school is aimed at master and PhD students, researchers, and practitioners interested in the study of rewriting concepts and their applications. In addition the working group host the RTA list of open problems and maintenance a (collection of) of home pages on rewriting and related research.

Members

It is with great sorrow that we have to announce that on June 3 our colleague and friend Bernhard Gramlich passed away. In order to honour his achievements for rewriting Bernhard was awarded a Lifetime Achievement Award by the KGS and the RTA.

WG 1.07 — Theoretical Foundations of Security Analysis and Design

Chair Prof. Pierpaolo Degano, University of Pisa, Italy

Vice-Chair Prof. Véronique Cortier, University of Nancy, France

Secretary Prof. Riccardo Focardi, University of Venezia, Italy

Home page www.dsi.unive.it/IFIPWG1_7

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The WG 1.7. is on the theoretical foundations of security analysis and design, and it has been established in 1999.

It mainly aims at investigating the theory of security, as well as of privacy and trust, at discovering and promoting new areas of application of theoretical techniques in computer security and at supporting the systematic use of formal techniques in the development of security related applications.

Currently it has 28 members, from 14 countries (USA: 8 1/2; France: 4; Italy, UK: 3; Germany: 2; Australia, Belgium, China, Denmark, Ireland, Luxemburg, Netherlands: 1; Israel: 1/2).

The main activities of the WG in organising scientific events concern establishing and running:

* Principles Of Security and Trust (POST), the sixth main conference of ETAPS, established in 2012 after 11 years of the Workshop on Issues in the Theory of Security (WITS) that became in 2011 an associated conference at ETAPS, under the name of Theory of Security and Applications (TOSCA). Almost always, these WS originated volumes in the LNCS series and special issues of archive journals. The creation of POST and the continuous contribution to its organization as Program Chairs is one of the major outcomes of the WG;

* a special issue of the Journal of Computer Security devoted to selected papers of POST 2013 and 2014; most likely there will be a special issue of the Journal of Computer Security for POST 2015;

* 3rd Workshop on Hot Issues in Security Principles and Trust (HotSpot), to be held a satellite event of ETPAS. In this year HotSpot had 11 submissions;

* International School on Foundations of Security Analysis and Design FOSAD, organised since 2000.

The WG is involved in the organisation of POST, HotSpot and FOSAD also in the years to come.

Needless to say, the members of the WG are actively involved in national and international projects on security; as members of the editorial boards of many highly reputed journals; as PC members of many international conferences, and as PC and chairs (e.g. POST 2016); as well as in the dissemination of the theory and methodology of security in Universities, international schools (e.g. the mentioned FOSAD or the PhD school BISS (more than 40 participants, mainly from Italy) that takes place yearly), seminars etc.

WG 1.08 — Concurrency Theory

Chair Dr. Ilaria Castellani, Sophia Antipolis, INRIA, France

Secretary Prof. Mousavi Mohammad Reza, Halmstad University, Sweden

Home page www.concurrency-theory.org/organizations/ifip

2014 BRIEF ACTIVITY REPORT

In 2014, we had the following events:

- OPCT 2014
- TRENDS 2014 + Business meeting

which were already described in some detail in the activity report that we sent you before the Rome meeting (around Aug 28-29, 2014) which is included below for quick reference.

Since then, we can signal the following facts:

- The 2014 edition TRENDS was again successful, with about 30 participants
- A new web page has been set up for the WG
- A round of nominations for new members is going on at the moment (targeting 60 members)
- TRENDS 2015 is being organised, again as a satellite workshop of CONCUR (in Madrid this year)

WG 1.09/2.15 — Verified Software

Chair Prof. Gary T. Leavens, University of Central Florida, US

Vice- Chair Prof. Jim Woodcock, York, UK

Secretary Dr. Natarajan Shankar, SRI International, US

2014 BRIEF ACTIVITY REPORT

Meeting within the reporting period

1. December 15-17, 2014, College de France, Paris, France
with 17 participants and 4 observers from the WG.
Beautiful setting, talks by Gérard Berry were a highlight.
2. July 14-16, 2014, T.U. Wien, Vienna, Austria
with 11 participants and 2 observers from the WG.
The plan was to focus on an European project proposal, so
the meeting was somewhat smaller than usual.

Next meeting

July 15-17, 2015, SRI International, Menlo Park, California
The VSTTE conference immediately follows the meeting.

New members of the WG

Klaus Havelund	Jet Propulsion Laboratory
Sandrine Blazy	University of Rennes
Andreas Podelski	Univ. of Freiburg
Shaz Qadeer	Microsoft Research

Additional activities

We run the VSTTE conference, which happened at about the same time
as our meeting in July during the Vienna Summer of Code.

WG 1.10 — String Algorithms & Applications

Chair Prof. Costas Iliopoulos, Kings College, London, United Kingdom

Secretary Prof. Bill Smyth, McMaster University, Canada

2014 BRIEF ACTIVITY REPORT

Minutes of the first IFIP 1.10 Committee meeting

Members present:

Costas Iliopoulos, Kings College London (Chairman)

Bill Smyth, McMaster University (Secretary)

Amihood Amir, Bar Ilan University

Rajeev Raman, University of Leicester

Simon Puglisi, University of Helsinki

Wojciech Rytter, University of Warsaw

Jan Holub, Czech Technical University

Solon Pissis, Kings College London

Hideo Bannai, Kyushu University

Maxime Crochemore, Kings College London

Esko Ukkonen, University of Helsinki

* Explore the possibility of sponsoring IFIP event or IFIP conference through discussions with organisers/steering committees.

Possibilities:

- o International Workshop on Combinatorial Algorithms (IWCA)
- o Combinatorial Pattern Matching (CPM)
- o String Processing and Information Retrieval (SPIRE)
- o Prague Stringology Conference (PSC)
- o Stringmasters o Stringology, Israel
- o London Stringology Day & London Algorithmic Workshop (LSD & LAW)

* Explore ways and means of co-sponsoring event(s) with the Royal Society

* We support Jacques Sakarovitch's candidacy for Chairman of the Theoretical Computer Science Committee

* Explore the idea of awarding students for a paper or dissertation

Appendix B

Proposal for the TCS Conference

by *Luis Barbosa* (7 June 2015)

As the meeting place of the TC1 community, the TCS conference has both a role to play and a memory to preserve. Still the proliferation of specialised conferences and workshops in several overlapping areas, as well as the need to act as a (meaningful) complement, rather than as a competitor, to TC1 WGs initiatives, entails the need to re-think its organisation for the years to come.

Therefore, the last TC1 Business Meeting, hold in London, April, 16th 2015, decided to promote the discussion among its members and the TC1 WGs on the following proposal.

1. The Committee identifies the following as specific aims of the TCS Conference:
 - to provide a forum for the several WGs of TC1, as a place for the community to meet, network, share insights, identify research questions and societal challenges relevant to theoretical Computer Science;
 - and to support TC1 mission as stated in its objectives, i) "the development of theoretical computer science as a fundamental science that has similar scientific goals in understanding the information processing world as physics has in understanding the energy processing world and similar goals in developing methodology for science and technology as mathematics does"; and ii) "the development and exploration of fundamental concepts, models, theories, systems, and other basic tools and the understanding of laws, limits, and possibilities of information processing as well as to develop bridges with other sciences and their applications".
2. It proposes to reshape TCS as a federated conference covering the themes and current research objectives of TC1 WGs in order to
 - reinforce its role as an open, dynamic forum for TC1 WGs;
 - foster synergies between groups and individual researchers, contributing to develop a broader, cross-cutting perspective on theoretical computer science;
 - contribute to increase awareness, in both industry and academia, of the fundamental role of theoretical computer science in the development of a scientific body of knowledge underlying Informatics, its engineering disciplines, and information-driven societies in a broad sense.

3. To achieve these objectives, it is proposed the structuring of TCS around a nucleus of (3 to 6?) events organised by the WG, co-located in a suitable venue, and complemented with:

- a common series of invited lectures;
- an open event on the "state-of-the-art" tendencies/challenges in the scope of TC1, including, for example, roundtable debates and a panel with industry speakers;
- a doctoral symposium in theoretical computer science, providing a broad forum for PhD students in all areas covered by TC1 and a rich opportunity for networking.

By moving in this direction, we expect to promote TCS as a conference with a clearly distinguished flavour, federating WG initiatives rather than competing with them, as well as a flagship event for theoretical computer science, and a multidisciplinary initiative very much in the spirit of IFIP.

4. This re-shaping of TCS requires, however, that enough time is allowed to articulate different WG initiatives and organise the whole initiative in a smooth way, avoiding clashing with already scheduled events. Therefore, we propose to postpone the realisation of next TCS conference from 2016 to 2017, possibly in September.

The Committee would like to share this proposal with the WG chairs in order to receive feedback on

- the overall idea;
- each WG willingness to contribute (namely with concrete events to re-schedule this way);
- further suggestions to enrich the proposal (including, but not restricted to, dates and venue).

We would like to gather all contributions in order to make a final decision in the next TCS Business Meeting, scheduled for Kyoto next July.