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Trustworthy Global Computing

International Symposium, TGC 2005
Edinburgh, UK, April 7-9, 2005
Revised Selected Papers

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Preface

Computing technology has become ubiquitous, from global applications to minuscule embedded devices. Trust in computing is vital to help protect public safety, national security, and economic prosperity. A new area of research, known as global computing, has recently emerged that aims at defining new models of computation based on code and data mobility over wide area networks with highly dynamic topologies, and that aims at providing infrastructures to support coordination and control of components originating from different, possibly untrusted, sources. Trustworthy global computing aims at guaranteeing safe and reliable network usage, also by providing tools and framework for reasoning about behavior and properties of applications.

An International Symposium on Trustworthy Global Computing (TGC 2005), was held in Edinburgh, UK, April 7–9, 2005. The symposium contained presentations and discussions dealing with issues such as:

- resource usage,
- language-based security,
- theories of trust and authentication,
- privacy, reliability and business integrity,
- access control and mechanisms for enforcing it,
- models of interaction and dynamic components management,
- language concepts and abstraction mechanisms,
- test generators, symbolic interpreters, type checkers,
- finite state model checkers, theorem provers,
- software principles to support debugging and verification.

The themes of the workshop were inspired by the activities of the IST/FET proactive Initiative on Global Computing funded by the European Union. Indeed, TGC 2005 can be considered as the evolution of the previous Global Computing Workshops held in Trento (see, for example, LNCS 2874) and the workshops on Foundation of Global Computing held as satellite events of ICALP or Concur (see, for example, ENTCS Vol. 85)

The format of the symposium was not that of a classical conference, but one structured to leave room for discussions stimulated by a conspicuous number of invited talks and by the papers selected after standard refereeing.

At the symposium we had 10 invited talks, and 11 contributed papers selected by the Program Committee (PC) after a call for contributions and a selective refereeing process (each paper was reviewed by four researchers). The invited talks were delivered by the following distinguished researchers, chosen by the PC members: Michele Bugliesi (Univ. of Venice, Italy), Luis Caires (Univ. Nova of Lisbon, Portugal), Matthew Hennessy (Univ. of Sussex, UK), Peter Van Roy (Univ. Catholique de Louvain, Belgium), Elsa Gunter (New Jersey Inst. of Technology, USA), Joshua Guttman (Mitre, Bedford, USA), Greg Meredith (CTO,

Djinnisys Corporation, USA), Mark Miller (HP, USA), Benjamin Pierce (Univ. of Pennsylvania, USA), Wolfram Schulte (Microsoft, USA).

This volume contains revised versions of the accepted papers which took into account both the referees' reports and the discussions that took place during the symposium. The volume contains also 8 papers contributed by the invited speakers.

The organization of TGC 2005 was stimulated by the IFIP Working Group (WG) 2.2. (`http://www.irisa.fr/s4/wg22/`). In the past, this WG organized a general working conference every 4 years. Members felt that the format should change, and the conference should be more focused. TGC 2005 was the first thematic conference promoted by the WG. The symposium had the co-sponsorship of IFIP TC-2 (Technical Committee 2 "Software: Theory and Practice"), to which WG 2.2 belongs.

The Program Committee included coordinators of EU Global Computing projects, organizers of past events similar to TGC 2005, and a few external experts on security and GC: Luca Cardelli (Microsoft Cambridge, UK), Giuseppe Castagna (ENS Paris, France), Adriana Compagnoni (Stevens Institute, USA), Rocco De Nicola (Florence, Italy, Chair), José Luiz Fiadeiro (Leicester, UK), Roberto Gorrieri (Bologna, Italy), Jean-Jacques Levy (Inria, France), Huimin Lin (Chinese Academy of Sciences, China), Eugenio Moggi (Genoa, Italy), Mogens Nielsen (Aarhus, Denmark), Flemming Nielson (Lyngby, Denmark), Joachim Parrow (Uppsala, Sweden), Corrado Priami (Trento, Italy), Julian Rathke (Sussex, UK), Davide Sangiorgi (Bologna, Italy, Chair), Don Sannella (Edinburgh, UK), Vladimiro Sassone (Sussex, UK), Jean-Bernard Stefani (Inria, France), and Martin Wirsing (Munich, Germany).

We would like to thank all the members of the Program Committee, and their subreferees, for putting together the selective program of the conference.

TGC 2005 was co-located with the events of ETAPS 2005, in Edinburgh. Special thanks is due to the Local Organizing Committee from Edinburgh University, in particular Don Sannella and Massimo Felici, who helped us patiently through our (almost endless) email messages. We would also like to thank Lorenzo Bettini (University of Florence) for his help during the periods of paper submission and preparation of the LNCS proceeedings.

July 2005

Rocco De Nicola
Davide Sangiorgi
TGC 2005 Co-chairs

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