Editorial: A Few Comments Before Leaving the Helm

DEAR TCAS-I Reader,

After two years of service as the Editor-in-Chief (EIC) of the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS (TCAS-I), my term is coming to an end and I am delighted to review with you the activities and endeavors which have been undertaken since January 2008. Despite the fact that there are certainly issues which still need to be addressed, many challenges have been successfully solved and for this, I am deeply indebted to many individuals who contributed all their capabilities and efforts toward TCAS-I: to them go my sincere thanks and deepest appreciation.

Before diving into more technical details and data, I wish to share with you some more personal thoughts. Reflecting retrospectively on my service as an EIC for the past four years (including those spent leading the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS), I certainly have mixed feelings. On the one hand, I will surely not miss the numerous deadlines relating to this activity, nor the stress and pressures of attempting to constantly improve the status of the journal and its perception in the scientific community. What I will undoubtedly miss is the sense of community, of "belonging" and even of *family* that this editorship has brought to me.

The most important members of this family are certainly the colleagues forming the TCAS-I Editorial Board (EB), who have been working around the clock to make quick and fair decisions on each manuscript, while performing a thorough review process that has enabled us to increase the high standards of TCAS-I. It has been fun to send/receive messages at impossible hours to (and from) each of them and see issues immediately solved. No EIC could dream of a better group of people to work and interact with!

Among them, I owe my deepest gratitude to the many Associate Editors who have been handling a very large number of papers and who have made extra effort in maintaining a quick turnaround time, even when working with an almost impossible load of manuscripts much larger than that they agreed to handle at the beginning, and/or who have also shown particular skills in handling difficult situations. More specifically, I wish to acknowledge with special gratitude the support of Drs. Eduard Alarcon, Bertan Bakkaoglu, Gaurab Banerjee, Mario di Bernardo, Sergio Callegari, Manuel Delgado-Restituto, Andreas Demosthenous, Mauro Di Marco, Zbigniew Galias, Jose Pineda de Gyvez, Hakan Johansson, Eric Klumperink, Yong Lian, Shen-Iuan Liu, Antonio Lopez-Martin, Gabriele Manganaro, Yehia Massoud, Philip K.T. Mok, Gaetano Palumbo, Shanthi Pavan, Eduardo Barros da Silva, Jose Silva-Martinez, Dusan M. Stipanovic, and Wolfgang Utschick.

A very important part of this family has also been the members of the Board of Governors (BOG) of the IEEE Circuits and Systems Society (CAS-S). All of them, in particular, the 2009 IEEE CAS-S President Prof. David Allstot, the Past-President Prof. Maciej Ogorzalek, the VP—Publications Prof. Enrico Macii, and the VP—Administration Dr. Tuna Tarim, have been very supportive for all the needs of the journal, especially in terms of page budget increase. I wish to express to them my deepest gratitude.

Finally three members who, for the time they spent interacting with me, could well be part of my *real* family. First to mention, Prof. Wouter Serdijn of Delft University of Technology, the Netherlands, served as TCAS-I Deputy-Editor-in-Chief (DEIC) in an amazing way, being not only hard-working and extremely reliable, but also very keen to propose new ideas and directions for enhancing the level of the journal and who, most importantly, is a great person to interact with. Last, but not least, my editorial assistant, Dr. Alistair Rennie, whose countless personalized reminders have been fundamental to keeping the journal on track, as well as Mr. Alberto Grosso, administrator of the CAS Web Manuscript System (CAS-WMS) at http://tcas1.polito.it, who has kept it up and running at all times and who has made constant enhancements of its features upon the motivated requests of authors, reviewers, Associate Editors, and myself.

I will miss the interaction with all members of this family and to each of them go my sincere thanks and appreciation for the results which have been achieved and highlighted by the following statistics.

REDUCTION OF THE TIME BETWEEN MANUSCRIPT SUBMISSION AND PUBLICATION

At the time of writing this Editorial (November 23, 2009) we had 1727 new submissions with an increase of around 30% with respect to the previous two years, to which we need to include the 400 open papers which we inherited at the time of transition (more than 300 of which had no first decision). Despite the appreciable additional load, *the average first decision time has been greatly shortened*: as shown in Table I, we are currently at 68 days, which amounts to a decrease of almost 200% in relation to the past average. It is also worth stressing that, on the one hand, this data is statistically significant, given the low percentage of papers with a decision time that is notably higher than the average (see again Table I). On the other hand, this result has been achieved maintaining a very high level of selectivity in the review process, as testified by an acceptance rate which has been decreased to just below the 21% mark.

The last row of Table I is also particularly significant, showing the average time from submission to electronic publication in IEEEXplore, a performance measure recently introduced by IEEE. As can be seen, *for all papers which appeared in 2009 it is about 37 weeks*, while *for papers scheduled to appear in print till September 2010 it is approximately 28 weeks*. As a comparison, it is worth stressing this figure has currently a mean value of about 42 weeks for all IEEE journal using ScholarOne Manuscripts™.

Digital Object Identifier 10.1109/TCSI.2009.2038187

TABLE I
AVERAGE PROCESSING TIMES (IN DAYS) FOR PAPERS SUBMITTED TO TCAS-I AFTER DECEMBER 5, 2007

Number of first decisions	1593
Total first decision time	68
EIC assignment to AE delay	2.4
AE assignment to reviewers	20.2
AE recommendation delay	6.9
EIC final delay	0.3
Percentage of papers with first decision time $>$ 90 days	8.9%
Percentage of papers with first decision time $>$ 180 days	0.5%
Time from submission to electronic publication (2009)	280
Time from submission to electronic publication (2010)	213

On the down side, these remarkable results are regrettably partially hindered by the hard-copy publication backlog. In fact, notwithstanding the efforts made by CAS-S BOG to increase the page budget from 2840 to 3736 in 2008 and from 2150 to about 2800 in 2009 and the increase in the journal selectivity, the original backlog of 11 months at the beginning of 2008 has only been reduced to 9 months, still far from the optimal level of 5 months. Due to this, and in spite of the fact that we could accommodate a few important initiatives to increase quality and perception of the journal, we were forced to turn down several very good special issue proposals. This is an issue that my successors, and CAS-S as a whole, will need to address in the incoming years.

In the meantime, to at least partially circumvent the problem, we began exploiting the mechanism of *rapid posting* which allows us to post the final and copy-edited version of a manuscript in IEEEXplore approximately six weeks after submission to the TCAS-I web site. This copy is the same as that which will be printed with the exception of page numbering, but with the same *Digital Object Identifier*, which allows it *to be read and cited* by other authors.

TCAS-I SPECIAL ISSUES/SECTIONS AND INVITED TUTORIALS

With an aim to increasing the impact and quality of the journal, TCAS-I has launched in the last two years several initiatives, some of which start showing a positive impact on the readership. Among those, worth highlighting are as follows.

1) *The publication of overview papers based on the most successful tutorial delivered at ISCAS*. The first two invited contributions from ISCAS2008 were prepared by outstanding authors from academia and industry, namely by Prof. Behzad Razavi (UCLA)—on "Millimeter-wave CMOS Radio"—and Dr. Bryan Casper and Dr. Frank O'Mahony (Intel)—on "Clocking Analysis, Implementation and Measurement Techniques for High-Speed Data Links", and appeared as the first 2 papers in the January 2009 issue. They have been highly appreciated by the readership, as highlighted by the fact that they have been the 38th and 196th top-most downloaded papers in IEEEXplore in February 2009.

   This yearly tradition has continued with ISCAS2009, whose successful tutorial delivered by Prof. Krishnendu Chakrabarty (Duke University) has become an invited paper on "Design Automation and Test Solutions for Digital Microfluidic Biochips" which will appear as the first paper in the January 2010 issue.

   I am convinced that this will also attract great interest and I am personally looking forward to reading similar contributions for ISCAS2010 tutorials in the January 2011 issue of TCAS-I.
2) *The publication of a special issue composed of the best papers presented at ISCAS*. The authors of several high-quality technical contributions presented at ISCAS2008 were invited to submit follow-up papers to TCAS-I. The selection was made from a short list of contributions which were most appreciated during the ISCAS review process, plus those manuscripts which received the best student paper award. Among the 45 contributions which were invited, 42 were submitted and, at the end of the review process, 20 were accepted to form the May 2008 issue and presented the latest advancement in the areas of *Analog and Mixed Mode Circuits and Systems*, *Digital Circuits and Systems and VLSI* and *Circuits and Systems for Communications*. Surfing the wave of the very positive feedback received from the readership, a similar initiative is currently on-going for ISCAS2009. In this case, 33 papers have been submitted and the review process is underway, with the May 2010 issue as the publication target.

   Certainly, I look forward to the ISCAS special issue in TCAS-I becoming also a yearly event, which, I am sure, will contribute to further enhancing the trend of quality increase of the conference, as well as of the journal.
3) *The publication of a special section composed of selected papers from the IEEE Custom Integrated Circuit Conference*, with the aim of increasing the chance of cross-fertilization between the Circuits and Systems and Solid State Circuits scientific communities. For CICC2008, 13 papers were invited, out of which 9 were selected for publication in the August 2009 issue. These papers complement those that were invited to the IEEE JOURNAL ON SOLID-STATE CIRCUITS and target the papers that are more focused on system level, innovative design methodologies, modeling, and/or forward-looking ideas. Despite being too early to witness any concrete impact for this initiative, the feedback has been very positive also in this case, and a similar special section is planned for 2010.

To summarize, the figures above clearly show that TCAS-I is a healthy publication where a **good paper will appear in IEEEXplore approximately 7–8 months after submission**. We hope that this will help to attract even better submissions and to further increase the perception of high quality in the minds of our readers.

A further detail which needs to be highlighted is that of the TCAS-I Impact Factor (IF)[1]. Thanks to the actions that have been taken during the last years to improve this important parameter (e.g., improved facilities in the web-site for inclusion in papers of relevant citations and references, as well as the introduction of Editors' Information Classification Scheme (EDICS) in the paper submission system, which allows all reviewers to access papers accepted in TCAS-I since 2004 which have the

[1]The interested reader is referred to http://thomsonreuters.com/ or to http://en.wikipedia.org/wiki/Impact_factor for more details on the IF.

TABLE II
2000–2007 IMPACT FACTOR VALUE FOR TCAS-I AS COMPUTED BY ISI

2000	2001	2002	2003	2004	2005	2006	2007
0.595	0.642	0.956	1.061	0.953	1.252	1.153	1,284

same keywords as the publication currently under review), the results have started to become very satisfactory. As recently reported by ISI, the IF of TCAS-I grew to 2.043, which is the *highest value* since the IF was introduced and which shows an increase of 106% with respect of the average IF value the journal had between 2000 and 2007 (see Table II). I believe that this is a significant improvement which has put TCAS-I for the first time in the top 25% of the ranking of the journals in the area of *Electrical and Electronic Engineering*. Notwithstanding this latest important result, there is still room for improvement to reach the same IF level of the most prestigious journals in IEEE, such as the IEEE TRANSACTIONS ON SIGNAL PROCESSING $(\mathrm{IF} = 2.335)$, the IEEE TRANSACTIONS ON ELECTRON DEVICES $(\mathrm{IF} = 2.730)$ and the IEEE JOURNAL OF SOLID-STATE CIRCUITS $(\mathrm{IF} = 3.466)$, and which is undoubtedly deserved for a journal publishing such high level technical contributions and with the reputation of TCAS-I. I hope that some of the new initiatives described above will give rise to a further IF improvement in the near future.

In spite of the nice picture outlined above, there are still a few points that need to be addressed.

First of all, during 2008 and 2009 I could not help noticing the reasonably large number of submitted papers, especially in the areas of Signal (and Video) Processing, Power Electronics and Automatic Control, which are still out of scope for the Transactions. Before preparing a manuscript for TCAS-I, authors are strongly advised to read the guidelines for authors given at http://tcas1.polito.it/authors.html.

The adoption of an Editors' Information Classification Scheme (EDICS, see http://tcas1.polito.it/Forms/kwlist.html) brought only a mild improvement from this point of view and my advice to my successor is to undertake a revision of this list to make it more stringent and more updated from a technical viewpoint. It is however worth stressing that, on the other hand, the EDICS have been extremely helpful for facilitating the assignment of papers to Associate Editors and reviewers (who are experts in the area of each submission) in conjunction with the improvements made through the CAS Web Manuscript System (CAS-WMS), as described in my January 2007 Editorial of TCAS-II.

A further issue relates to the considerable number of papers which are relatively short, to the extent that they are (or could be reduced by proper formatting according to the standard two-column IEEE Transactions style to) less than six pages. These should be submitted to TCAS-II and have therefore been returned to authors without review.

Let me conclude by expressing my sincere appreciation to all reviewers, whose unselfish dedication made it possible to increase the high technical qualities of the papers appearing in TCAS-I, and of course to the authors for submitting the high quality results of their research efforts to TCAS-I.

Last, but not least, it is my pleasure to mention that I leave the journal in the very good hands of my former DEIC, Professor Wouter Serdijn. Under his capable tenure, I am sure TCAS-I will further improve its current status and I wish Wouter and his new team the best possible success in this task.

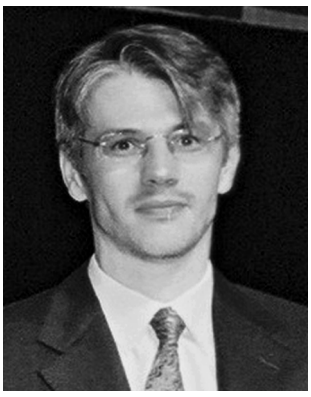
Finally... let me thank you all for the great ride! It has been a lot of fun!!

Gianluca

GIANLUCA SETTI
Department of Engineering (ENDIF)
University of Ferrara
Ferrara, 44100 Italy

and

Advanced Research Center for Electronic Systems (ARCES)
University of Bologna
Bologna, 40125 Italy



Gianluca Setti (S'89–M'91–SM'02–F'06) received the Dr.Eng. degree (with honors) in electronic engineering and the Ph.D. degree in electronic engineering and computer science from the University of Bologna, Bologna, Italy, in 1992 and in 1997, respectively, for his contribution to the study of neural networks and chaotic systems.

From May 1994 to July 1995 he was with the Laboratory of Nonlinear Systems (LANOS) of the Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland, as visiting researcher. Since 1997 he has been with the School of Engineering at the University of Ferrara, Ferrara, Italy, where he is currently a Professor of Circuit Theory and Analog Electronics. He held several visiting position at Visiting Professor/Scientist at EPFL (2002, 2005), UCSD (2004), IBM T. J. Watson Laboratories (2004, 2007) and at the University of Washington in Seattle (2008) and is also a permanent faculty member of ARCES, University of Bologna. His research interests include nonlinear circuits, recurrent neural networks, implementation and application of chaotic circuits and systems, statistical signal processing, electromagnetic compatibility, wireless communications and sensor networks. He is co-editor of the book *Chaotic Electronics in Telecommunications* (CRC Press, 2000) and *Circuits and Systems*

for Future Generation of Wireless Communications (Springer, 2009) as well as one of the Guest Editors of the May 2002 Special Issue of THE PROCEEDINGS OF THE IEEE on "Applications of Non-Linear Dynamics to Electronic and Information Engineering."

Dr. Setti received the 1998 Caianiello prize for the Best Italian Ph.D. dissertation on Neural Networks and is co-recipient of the 2004 IEEE CAS Society Darlington Award, as well as of the Best Paper Award at ECCTD2005 and the Best Student Paper Award at EMCZurich2005. He served as: an Associate Editor for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: FUNDAMENTAL THEORY AND APPLICATIONS (1999–2002 and 2002–2004) and for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS (2004–2007); the Deputy-Editor-in-Chief for the *IEEE Circuits and Systems Magazine* (2004–2007); and the Editor-in-Chief for the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS (2006–2007) and of the IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS (2008–2009). He was the 2004 Chair of the Technical Committee on Nonlinear Circuits and Systems of the of the IEEE CAS Society, a Distinguished Lecturer (2004–2005), a member of the Board of Governors (2005–2008), and will be serving as 2010 President of the same society. He was also the Technical Program Co-Chair of NDES2000 (Catania, Italy) the Track Chair for Nonlinear Circuits and Systems of ISCAS2004 (Vancouver, Canada), the Special Sessions Co-Chair of ISCAS2005 (Kobe, Japan) and ISCAS2006 (Kos, Greece), the Technical Program Co-Chair of ISCAS2007 (New Orleans, LA) and ISCAS2008 (Seattle, WA), as well as the General Co-Chair of NOLTA2006 (Bologna, Italy).