Incoming Editorial

DEAR readers, it is a great honor and privilege for me to start my two-year term of duty as Editor-in-Chief (EiC) of IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS (TCAS-I) and I am very thankful to the IEEE Circuits and Systems Society (CASS) for giving me this opportunity. Throughout my career, I have served IEEE-CASS in several positions, including technical and organizing committees of flagship conferences, a Distinguished Lecturer, the Chair of the Spain Chapter, and more recently as a Member-at-Large of the Board of Governors. Since 2012, I have been a member of the editorial boards (EBs) of the TCAS-I and IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS (TCSA-II), being the EiC of IEEE TCAS-II during the term 2020–2021.

Over these years, I have been very fortunate to work with several presidents and officers of IEEE-CASS, from whom I learned a lot and with whom we did all our best to give our peers the best service. I am very proud to have contributed in the last few years to boom the impact factor of CASS journals—very specially TCAS-II—to their highest scores ever. The teams of editors, legions of reviewers, and excellent authors' contributions made it possible to reach this outstanding performance, which fortunately has continued improving in the last couple of years with the hard work, dedication, and initiatives carried out by the present EiC teams.

Thanks to the excellent diligence and intense dedication of prior EBs, and very specially the outgoing EB team led by Prof. Weisheng Zhao, the performance of TCAS-I has significantly improved over the last few years. The huge reputation of our Transactions can be quantitatively measured by its high impact factor (5.1) as well as the high quality of published works, having a good balance between industry and academic works, theoretical analyses versus practical applications, and innovative research versus tutorial papers written by top-leaders and well-recognized experts in diverse topics of circuits and systems. Moreover, the efforts done by prior IEEE-CASS Vice Presidents (VPs) Publications, Prof. Manuel Delgado-Restituto, Prof. Mohamad Sawan, and presently by Dr. Gabriele Manganaro, have given their fruits. Some measures taken in the last years, such as increasing the paper budget together with the hard work of our editors, reviewers, and authors, helped a lot to reduce the backlog and the time from submission to publication.

I am therefore in an enviable position to steer the ship in great condition, and on a good or even better course. Thus, prompted by this huge challenge, I will put all my efforts to continue pushing TCAS-I forward, by improving even more its prestigious as a premier international forum for first disclosure research in the diverse areas of circuits and systems. I will count on two important ingredients. The first one is my experience of more than ten years in the EBs of TCAS-I and TCAS-II. The second one is my strong willingness and motivation to assume this huge challenge, which will be translated into the required time and commitment to maintain and improve the excellence of TCAS-I. This is indeed the only thing I can assure and guarantee also for my term of duty as EiC of TCAS-I: work, hard work, and more hard work!

All this said, there are several challenges ahead that, in my view, the EB of TCAS-I should address, operate, and thrive. Among others, I will put special emphasis on the initiatives described below.

A. Journal Scope, New Topics, and Keynote Contributions

It is my firm intention to expand the scope of the journal and to attract papers dealing with emerging topics such as artificial intelligence, new computing paradigms, and beyond-CMOS circuits and systems, as well as new application scenarios such as metaverse and virtual reality, to cite a few. These and other topics are examples of cross-disciplinary research for which CASS has most, if not all, the necessary expertise. They are within the interest of IEEE-CASS members and may help also attract the interest of other authors and readers to publish their works in TCAS-I, thus increasing the readership community and impact of the journal. Previous EiCs of TCAS-I have done a great effort in this direction, and I am firmly compromised to continue pushing this strategy forward. At the time of writing this editorial, the list of Editors Information Classification Scheme (EDICS) is being carefully revised by CASS Technical Committees led by Prof. Xinmiao Zhang, CASS VP for Technical Activities, who will also serve as an Associate EiC (AEiC) for TCAS-I for 2024–2025.

Although limited by the page budget, keynote and tutorial contributions written by outstanding authors from academia and industry, covering both consolidated and emerging areas, will be invited to write survey papers. These seminal articles are usually well-received by readers and have a positive effect on the visibility of TCAS-I from other IEEE societies and non-IEEE scientific communities. These papers are in general in the list of the most popular articles posted at IEEE Xplore. The outgoing editorial team of TCAS-I has launched a nice initiative in the last years by posting information on LinkedIn about outstanding authors series. This is a good selection of *super-star* authors who are good candidates to contribute TCAS-I with inspiring overview and tutorial papers.

B. Special Issues and Conference Co-Publication Initiatives

Following the tradition initiated some years ago, I will keep the current special issue on our flagship conference, the

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International Symposium on Circuits and Systems (ISCAS). Following the recommendations of some prior EiCs of TCAS-I, I would do all my best to publish this special issue in the same month yearly, for instance in the December issue of the same year of the conference edition. Based on my experience, if the pre-selection and invitations to selected authors are synchronized with ISCAS papers notifications (usually by the end of January or mid-February), there is enough time—almost ten months—to have the follow-up (extended versions) of the papers published in the journal in the last issue of the year. The acceptance of papers in this special issue would be conditioned to the presentation of the conference paper at ISCAS and, it might eventually include the feedback provided by technical committees and session chairs if the first submission deadline is set by mid-June.

I will promote to follow a similar scheme of special sections in main regional CASS flagship conferences, such as NEWCAS and MWSCAS (Regions 1–7), ICECS (Region 8), LASCAS (Region 9), and APCCAS (Region 10). Of course, these special sections should be made up of a few papers, for instance, the best five papers of each conference. I will define a clear calendar for these special sections and issues to try keeping the same calendar yearly since conferences are usually held in the same periods of every year.

Another successful format of Special Issue published in both TCAS-I and TCAS-II is the so-called *journal-track symposium*. This format was successfully implemented by CASS at the International Symposium on Integrated Circuits and Systems (ISICAS), held for the first time in 2018, and has continued until now. This symposium—focused on integrated circuits and systems verified by experimental results—includes a selection of original works, which have been previously accepted in special issues on TCAS-I, TCAS-II, and TBioCAS. This is a successful initiative that I have the firm intention to keep on going in the future, not only in the form of journal-track symposia but also as journal-track sessions in CASS flagship regional conferences. This format of conference sessions, where TCAS-I authors are invited to present their works in a conference, has been successfully implemented in some editions of ISCAS, and I will work with the conference organizers to try to have *TCAS-track* sessions in future editions of ISCAS.

C. Page Budget, Backlog, and Paper Format

Despite their success, unfortunately, the number of special issues is severely constrained by the annual page budget, since this has a direct impact on the efforts to clear and reduce the backlog. To this end, I will work with CASS to increase the page budget to accommodate special issues and sections with a reduced impact on the submission-to-publication time. An important point related to the page budget is the TCAS-I paper format itself. My experience as EiC of TCAS-II showed that a slight change of format may have a big impact on the journal. During my term as EiC of TCAS-II, we modified the format of TCAS-II briefs so that the last column, i.e., the last half page is reserved for references only. This minor change has given authors the chance to better place their work in context, supported by a more exhaustive comparison with prior art. In the case of TCAS-I papers, we might consider applying similar minor changes, such as for instance limiting the space for authors bios to include more references within the same number of pages. Of course, it is more difficult to set a rule here that applies to the diversity of articles published in TCAS-I, which includes sometimes long theoretical analyses or detailed verification results that require the space needed. My intention is to define a set of clear guidelines for authors, reviewers, and editors, to recommend them how to optimize the space within a TCAS-I paper to show the maximum information within the minimum space possible, of course, without affecting the quality of the explanations given in the paper. For example, sometimes authors include a half-page diagram or plot, which in most cases, could be fixed within a column box. This simple recommendation would give almost half a page free. In the end, we could get more papers published in a lower number of pages, thus saving page budget, and allowing to reduce the time to have the paper in a printed issue.

D. Supplementary Material and Web-Based Repository

The limitation in the paper budget can be palliated by complementing the information published in a paper with additional multimedia information. To this end, the EBs of CASS have put a lot of effort in the past to increase the visibility of our Transactions by digital media and social networks. The EiC teams of CASS journals include an AEiC for Digital Communications, to manage the contents published in digital media and social networks, including LinkedIn and Twitter, among others. During my term as EiC of TCAS-II, I participated in the launch of this initiative under the guidance of Prof. Mohamad Sawan, and we worked together with all CASS journals to post *break news* related to CASS events, as well as any other news which may be of interest for TCAS-I/II readers. I plan to increase the quality and quantity of the content published in these media, including short videos recorded by all authors of papers recently published in TCAS-I. Indeed, we might consider also to ask authors of accepted papers to upload a 1–2 min presentation, which we could publish in social networks and in the IEEE CASS Resource Center. We learned a lot during the pandemic to record presentations for virtual platforms in conferences, and we may apply this to some CASS journals.

I am convinced that providing readers with additional materials and datasets to allow them to reproduce simulations and experiments, validate published approaches, and test the models, tools, methods, etc., would add more value to TCAS-I publications and would enrich the experience of authors and readers. Available web-based repositories, such as IEEE DataPort, can be used to post programing code lists, scripts, algorithms, circuit diagrams, netlists, extra figures, etc., GoogleApps@IEEE provide also shared storage to all IEEE members, and we could see the possibility to extend these tools to be used by our Transactions. These facilities have been there for a long time but, in my view, they have been underused. I will seriously explore the best way to implement this web-based repository in coordination with the EB of TCAS-I, the publishing staff of IEEE, and CASS officers. Whenever

possible, authors will be encouraged by editors to include the data used in their papers in the form of datasets. These online repositories would also increase the iteration between authors and readers, by doing the simulations/measurements separately by independent experimenters. The EB will play an important role by encouraging and assisting authors to provide the most appropriate materials to improve the visibility and quality of their published works and transform TCAS-I into a scientific publication of the XXI century.

E. Review Process and Feedback to Authors

None of the initiatives listed above would make sense if the review process is not carried out with the required care and devotion. The EiC plays a key role in this process, as the maximum responsible for the quality of the manuscripts published in the Transactions. This involves properly selecting those submissions, that are within the scope of TCAS-I, assigning suitable associate editors (AEs), supervising the review schedule, working together with IEEE publications staff, and taking care of the feedback provided by AEs and reviewers. Indeed, the latter is the most important part of the whole process for two main reasons. On the one hand, if a manuscript needs a revision, it is very important to provide authors the adequate comments and recommendations to improve their revised manuscript so that it can reach the necessary quality to be published in the Transactions. On the other hand, if a manuscript is rejected, the feedback is especially important since it must give authors a fair explanation, why they failed, and more importantly, it can be the vehicle to help authors improve their works in the future. During my experience by reviewing journal articles, I have always put all my efforts in giving authors the most detailed review comments and feedback possible. In my previous experience serving in the EBs of TCAS-I/II, I tried to do always all my best to identify those critical points suggested by reviewers, which led to the rejection of a given manuscript. I will do all my best to train editors and reviewers and provide them with detailed guidelines and instructions as I already did it as EiC of TCAS-II.

Another important factor is to achieve a good balance between the number of reviewers, the accuracy and fairness of the review process, and the speed of publication. Although IEEE rules allow to take decisions based on two reviewers, there is a long tradition in IEEE-CASS to support paper recommendations based on at least three reviewers, except if there are two consistent reviews that lead to a clear decision. I'll do all my best to follow these rules and to encourage AEs to assign their papers to a maximum of five reviewers, to avoid unnecessary delays due to late reviewers.

In 2024 TCAS-I and TCAS-II will transition to a new manuscript pre-screening flow, similar to that successfully used in other IEEE journals. This way, a *two-tier* system will be followed, where a group of senior AEs will assist the EiC in taking a quick (48–72 hours) decision on whether a paper is suitable for TCAS-I and will follow (or not) the regular peer-review process. This will allow us to reduce the AE workload, reduce the backlog, and give better service and feedback to authors.

F. Editorial Board

Addressing the aforementioned initiatives, as well as other ones that will come out, constitute a great challenge and responsibility for me. Fortunately, I will count on the help of a great team of editors and reviewers, led by my AEiC, Prof. Xinmiao Zhang, and my Digital Media AEiC, Prof. Xuan Zhang. The incoming EB has been carefully selected to achieve a good balance between experienced and *fresh* AEs, all of them with recognized expertise in both academia and industry within all CASS topics and research areas.

The AEiCs have also several important roles to play, such as handling the special issues mentioned above, clarifying the scope of the Transactions, and dealing with issues like plagiarism, prepublication, the use of artificial intelligence tools, etc. These duties will be mainly carried out by Prof. Xinmiao Zhang, with the help of Prof. Xuan Zhang, who will be mainly in charge of the duties required to visualize our Transactions in the digital media, dissemination activities, and promotion of TCAS-I articles in social networks.

Last but not least, I am firmly compromised during my term to work together with IEEE-CASS officers, and very specially our VP Publications, Dr. Gabriele Manganaro, to take all actions needed to improve the quality, impact, and visibility of TCAS-I, addressing in-coming challenges—such as the open-access publication policies according to different research council regulations, as well as any other issue that might arise. My ten years' experience in the EBs of TCAS-I/II constitute a guarantee to keep my firm promise to do all my best to guide IEEE TCAS-I to the best position in top-ranked publications.

To conclude this editorial, I would like to express again my deepest gratitude to the outgoing EB and EiC team, and very specially to Prof. Weisheng Zhao, for his excellent service, enormous dedication, professionalism, and huge efforts during his term of duty as EiC of TCAS-I in the last four years. Thanks to his commitment and devotion to his editorial service, some of the initiatives mentioned in this editorial, already running at TCAS-I, would have been impossible to do it, and many of the projects mentioned here would be very difficult even to imagine. On top of all the actions mentioned in this editorial, the contributions of all our authors and the feedback from our readers will be fundamental to maintain and improve the quality of our journal.

On behalf of the entire Editorial Board of TCAS-I, I wish all of you a wonderful year ahead and I look forward to your excellent contributions!

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José M. de la Rosa (Fellow, IEEE) received the M.S. degree in physics and the Ph.D. degree in microelectronics from the University of Seville, Spain, in 1993 and 2000, respectively.

Since 1993, he has been with the Institute of Microelectronics of Seville (IMSE), which is its turn part of the Spanish Microelectronics Center (CNM), Spanish Council of Scientific Research (CSIC). He is currently the Head of the Research Unit with IMSE, where he was the Vice-Director from February 2018 to March 2023. He is also a Full Professor with the Department of Electronics and Electromagnetism, University of Seville. Since April 2023, he has been the Director of the Office of International Projects, University of Seville. His main research interests include analog and mixed-signal integrated circuits, especially high-performance (sigma-delta) data converters, including analysis, behavioral modeling, and design, and design automation of such circuits. In these topics, he has participated in a number of national (Spanish) and international (European) research and industrial projects and has coauthored over 270 international publications, including journal articles and conference papers, book chapters, and six books, the latter being *CMOS Sigma-Delta Converters: Practical Design Guide* (Wiley-IEEE Press, 2013, 2nd edition, 2018).

Dr. de la Rosa was a member of the Executive Committee of the IEEE Spain Section from 2014 to 2015 and from 2016 to 2017, where he served as the Membership Development Officer from 2016 to 2017. He is a Member-at-Large of the IEEE Circuits and Systems Society (CASS). He is a member of the Analog Signal Processing Technical Committee of IEEE-CASS and the Steering Committee of IEEE MWSCAS. He has also been involved in the organizing and technical committees of diverse IEEE conferences, including ISCAS, MWSCAS, ICECS, LASCAS, IFIP/IEEE VLSI-SoC, DATE, and ESSCIRC. From 2016 to 2017, he served as the Chair for the Spain Chapter of IEEE-CASS. He served as the TPC Chair for MWSCAS 2012, ICECS 2012, LASCAS 2015, and ISICAS (2018 and 2019), and as the General Co-Chair for ESSCIRC 2023. He was at the front of the Editorial Board of IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—II: EXPRESS BRIEFS, where he served as the Deputy Editor-in-Chief from 2016 to 2019 and as the Editor-in-Chief from 2020 to 2021. He also served as an Associate Editor for IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS, where he received the 2012–2013 Best Associate Editor Award. He has been the Guest Editor of several special issues published in CASS journals. He has been appointed as the Editor-in-Chief of IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—I: REGULAR PAPERS in the term 2024–2025. From 2017 to 2018, he served as a Distinguished Lecturer for IEEE-CASS. He is usually in the World's Top 2% Scientists List from Stanford University (editions 2019, 2020, 2022, and 2023).