



MTT-S Society News

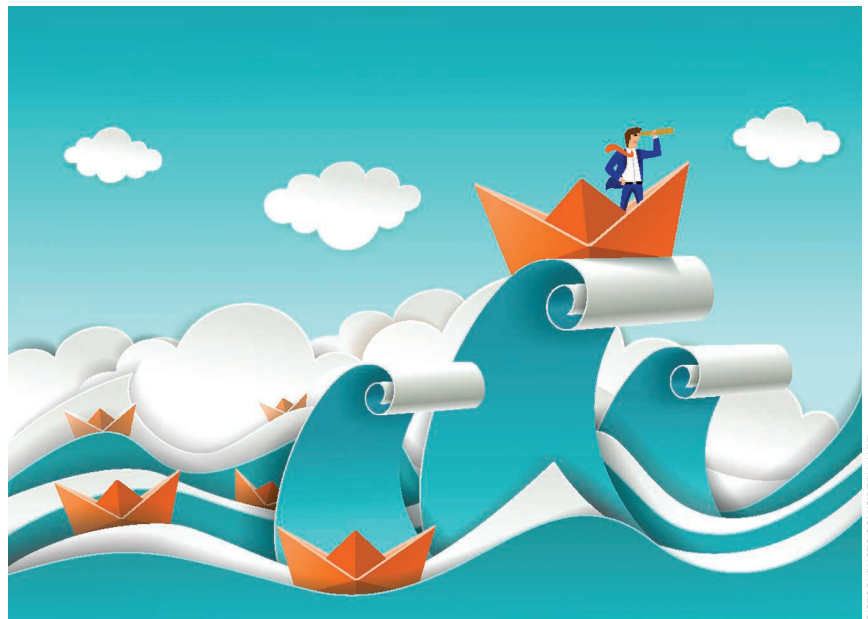
Spotlight on MTT-S Administrative Committees

■ Dietmar Kissinger and Robert H. Caverly

The following interview is the first in a series of Spotlight articles that will take an in-depth look at some of the committees that make up the IEEE Microwave Theory and Techniques Society (MTT-S) Administrative Committee (AdCom). I communicated with the chair of the Society's Technical Coordination and Future Directions Committee (TCFDC), Prof. Dietmar Kissinger (DK).

Thank you, Prof. Kissinger, for agreeing to participate in this first of a series of interviews and to discuss some background of the TCFDC. What exactly is the main purpose of the TCFDC?

DK: The traditional purpose of the TCFDC is to manage the various technical committees that exist within the MTT-S. There are currently 25 different committees that span various topics of interest for our Society, clustered into two main areas: 1) core technologies



and techniques and 2) systems and applications. These committees are the backbone of our Society and are overseen by one of my vice-chairs, Maurizio Bozzi. They organize conferences, workshops, student competitions, and special issues in magazines and transactions and provide technical expertise for grants, fellowships, and awards selection as well as to non-technical entities such as government

agencies and media companies. In addition, technical committees are involved in standardization efforts. We are constantly monitoring the timeliness and usefulness of our technical committees regarding their intended purpose of addressing specific areas requiring technology emphasis. We also recommend the discontinuation or establishment of committees to the AdCom for approval.

Dietmar Kissinger (dietmar.kissinger@uni-ulm.de) is with the University of Ulm, Germany. Robert H. Caverly (rcaverly@villanova.edu) is with Villanova University, Villanova, Pennsylvania, United States.

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Why does the committee have the long title?

DK: Since 2019, the aforementioned technical coordination focus of the committee has been enhanced by the planning and coordination of future directions activities of our Society (see Figure 1). It is organized as a subcommittee within the TCFDC and overseen by our vice-chair, Raafat Mansour. We conduct “horizon scanning” for additional new, emerging areas relevant to our Society’s field of interest and incorporate or incubate emerging areas into our existing or new technical committees as they mature. In addition, we interface with IEEE-level future directions initiatives. Here, my colleague Anding Zhu is our Society’s representative. The MTT-S is currently involved in a number of these high-level activities, such as the Internet of Things Initiative, overseen on our side by Luca Roselli; the Future Networks Initiative, very successfully led by former Society President Tim Lee; and the Quantum Initiative, managed by Steven Anlage. Our latest activity, headed by Nuno Borges Carvalho, is a Wireless Power Transfer project, where we want to take the initiative

and establish a pan-Societal program within this area. The planning of our future directions involvement is always cross-checked with the Society’s General Strategy and Strategic Planning Committee. I am also a member of this committee.

Where does the MTT-S member see the impact of TCFDC’s work?

DK: The impact of the TCFDC is significant but often hidden under various labels. For example, we have a number of committees that effectively run their own conferences, such as the International Conference on Microwaves for Intelligent Mobility and the International Microwave Bio-Conference. Most of the workshops and practically all of the student design competitions you encounter at the International Microwave Symposium are planned and executed by at least one of our technical committees. Many *IEEE Microwave Magazine* theme issues began as focused issues of a specific technical committee. We are also currently running an MTT-Sat Challenge, managed by Holger Maune, Jasmin Grosinger, and Markus Gardill, which is about to enter its second phase.

Here, we support microwave-related hardware activities, such as sensors and communication equipment, targeting CubeSat operation in space. In future phases of this project, we plan to intensify our technical cooperation with other Societies that are active in this area.

What are some of the accomplishments of the TCFDC in the last two years that the general MTT-S member would have seen?

DK: One of the most important and most visible tasks of the TCFDC is its management of the Distinguished Microwave Lecturer (DML) and Speaker’s Bureau program. Our DMLs are selected by a special committee, currently headed by Amir Mortazawi, based on a rigorous catalogue of criteria and are considered ambassadors of our Society. Here, a number of changes have been implemented in the recent past to better serve our various Chapters around the world. Our DML coordinator, Mohammad Madihian, is spending a lot of effort to geographically balance the talk allocation under our budget constraints to guarantee equal availability to all of our members. In

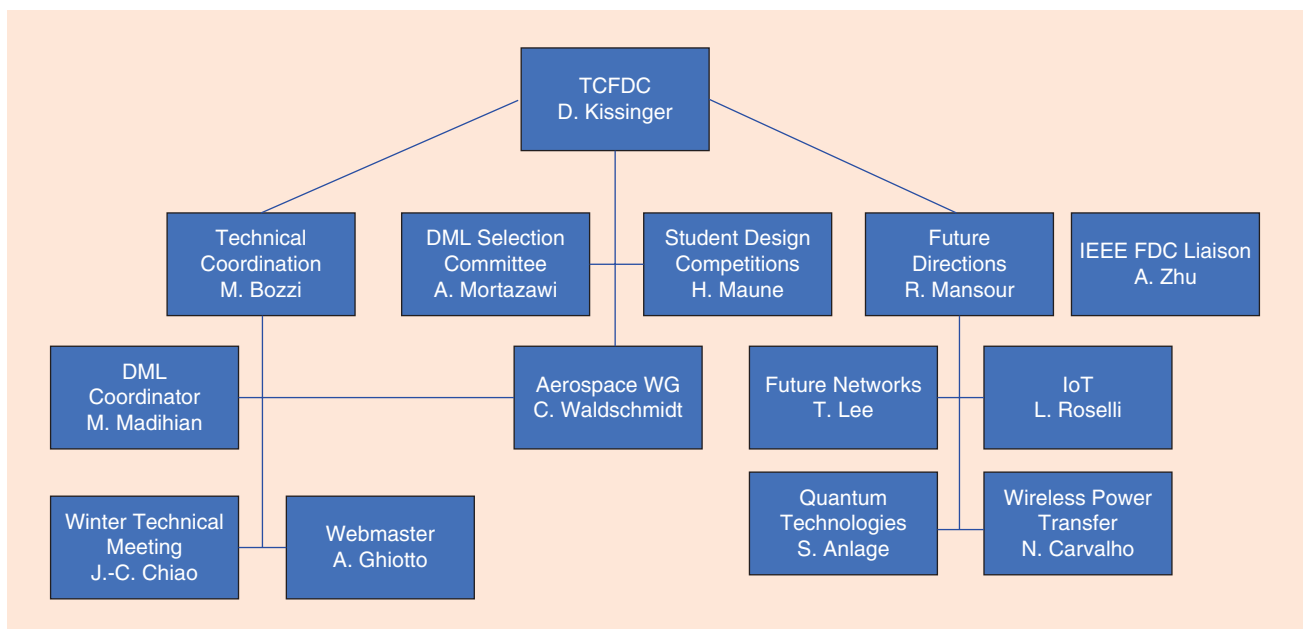


Figure 1. The organizational chart for the TCFDC. WG: working group; IoT: the Internet of Things; FDC: Future Directions Committee.

addition, *IEEE Microwave Magazine* overview articles and webinars by DMLs have been introduced for an even wider outreach.

What are some of the plans the TCFDC is working on that the general MTT-S member should be looking forward to?

DK: In this current crisis, we have started to offer virtual DML talks to continue to support our members. Beyond that, we are working closely with the Membership and Geographical Activities committees on new ideas to serve the ever-rising demand for our DMLs. These include ways of increasing the number of available speakers through, for example, more active DMLs and strengthening our Speaker's Bureau but also through developing new web interfaces for an easy, always-up-to-date platform for talk requests and an overview of availabilities in different regions. We have also established new working groups, for example, in the area of microwave aerospace applications and systems,

headed by Christian Waldschmidt, with the goal of establishing and coordinating the presence of the MTT-S and connecting with other Societies for joint activities in this important area. Another important working group is targeting microwave aspects of quantum engineering. This highly emerging field will continue to increase in importance for our engineering profession, and we want to engage in a process that transforms the concepts and ideas of the physics community into robust engineering innovations.

What made you want to become the chair of TCFDC?

DK: I have always seen our Society as the place where experts in microwave engineering come together to discuss ideas and new projects as well as to think about ways of letting

people outside our bubble know about what we do and what it is good for. This was the reason I served as chair and vice-chair of the Microwave and Millimeter-Wave Integrated Circuits technical committee for a number of years. At some point, I wanted to become more involved in the organization of the technical committees, in general, to change the things that I considered outdated or simply impractical. Thanks to my elec-

tion to the AdCom and the trust our president, Alaa Abunjaileh, has put in me, this is now possible for me as the current TCFDC chair. We have a great team in our TCFDC, including past Chair Sanjay Raman, which truly enables getting things done and constantly improves the service delivered by our committee. I feel honored to have been given this opportunity!



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embedded systems, microarchitecture and machine learning, filters, and RF circuit design. He intends to pursue a Ph.D. degree after his graduation.

Project Description

This project is about the design and development of a 2.4-GHz Bluetooth Low Energy (BLE) directional antenna that is harmless to the human body for a lightweight device that monitors ECG signals from both a pregnant mother and the fetus. The aim is to design a modified version of a patch antenna that can be transferred directly onto a printed circuit board and that is harmless to the human body. The antenna must also ensure the signal quality of the BLE connection,

since the project requires a high-bandwidth connection to monitor the ECG signal from the mother and the fetus.

Next Application Deadlines

Application deadlines for the next round of MTT-S undergraduate/pregraduate scholarships are 15 October 2020 and 15 April 2021. The portal will be open for submissions approximately one month before the deadline. IEEE membership is not requested during the application phase, but winners must be IEEE Members to receive the award. For more information, please visit: <https://mtt.org/students>.

