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Cognitive Radio-Oriented Wireless Networks

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Preface

We are delighted to introduce the proceedings of the 15th edition of the EAI International Conference on Cognitive Radio Oriented Wireless Networks – CROWNCOM 2020. Despite the ongoing emergency caused by the COVID-19 pandemic, which led to the decision to switch to a fully virtual format, the conference attracted researchers from all over the world active in all fields related to cognitive radio and networks and to the role of Artificial Intelligence in this research area. The theme of CROWNCOM 2020 was in fact "Intersection and interaction between cognition and communications in the context of 5G networks and beyond".

The technical program of CROWNCOM 2020 consisted of 14 full papers presented in the main conference track, which covered all major technical aspects related to cognitive radio and networks. The presentations were organized into four sessions: Session 1, "Spectrum sensing and environment awareness", addressing physical layer issues and in particular the collection of information towards efficient coexistence; Session 2, "Resource sharing and optimization", focusing on resource sharing and network organization and optimization; Session 3, "Verticals and applications", discussing verticals enabled by cognitive radio; and finally Session 4, "Business models and spectrum management", which presented and discussed spectrum management approaches and business opportunities made possible by cognitive radio in 5G.

Aside from the high-quality technical paper presentations, the program also featured an interesting special session on the topic of "Cognitive networks in the context of software defined everything", providing new perspectives on the role of cognitive radio and networking in the next generation flexible networks and applications, highlighting their challenges and potential. We would like to thank Dr. Jorge Pereira, Principal Scientific Officer at the Future Connectivity Systems Unit of the Directorate-General Communication Networks, Content and Technology of the European Commission, for proposing and organizing this special session.

We would like to thank the chair and members of the steering committee for granting us the opportunity of organizing the 2020 edition of CROWNCOM and participating in the legacy set by this conference through the years. We would also like to thank the colleagues that made this event possible: the authors that decided to submit their work to CROWNCOM 2020, allowing us to present a high-quality program; the members of the organizing committee, the chairs and members of the Technical Program Committee (TPC); and the reviewers, fundamental for carefully selecting the best contributions. We would like to acknowledge in particular Dr. Adrian Kliks, General Co-Chair of CROWNCOM 2019 and TPC Co-Chair in the 2020 edition, for his fundamental support in all phases of the conference organization, from the definition of its scope to the management of the reviewing process. We are also grateful to Conference Managers Kristina Petrovicova and Angelika Klobusicka for their support during the organization.

We believe that the CROWNCOM conference is the perfect framework for presenting, discussing and learning about recent developments related to cognitive radio in the context of 5G and beyond 5G networks, and we are confident that future editions will continue to provide a stimulating environment for further advancement on the research topics addressed by the contributions presented in this volume and beyond.

March 2021

Giuseppe Caso
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