

CROWNCOM 2016

Preface

The 11th EAI International Conference on Cognitive Radio Oriented Wireless Networks (CROWNCOM 2016) was hosted by CEA-LETI and was held in Grenoble, France, the capital of the Alps. 2016 was the 30th anniversary of wireless activities at CEA-LETI, but Grenoble has a more ancient prestigious scientific history, still very fresh in the signal processing area as Joseph Fourier worked there on his fundamental research, and established the Imperial Faculty of Grenoble in 1810, now the Joseph Fourier University.

This year, the main themes of the conference centered on the application of cognitive radio to 5G and to the Internet of Things (IoT). According to the current trend, the requirements of 5G and the IoT will increase demands on the wireless spectrum, accelerating the spectrum scarcity problem further. Both academic and regulatory bodies have focused on dynamic spectrum access and or dynamic spectrum usage to optimize scarce spectrum resources. Cognitive radio, with the capability to flexibly adapt its parameters, has been proposed as the enabling technology for unlicensed secondary users to dynamically access the licensed spectrum owned by legacy primary users on a negotiated or an opportunistic basis. It is now perceived in a much broader paradigm that will contribute toward solving the resource allocation problem that 5G requirements raise.

The program of the conference was structured to address these issues from the perspectives of industry, regulation bodies, and academia. In this transition period, where several visions of 5G and spectrum usage coexist, the CROWNCOM Committee decided to have a very strong presence of keynote speeches from key stakeholders. We had the pleasure of welcoming keynotes from industry 5G leaders such as Huawei and Qualcomm, the IoT network operator Sigfox, and the European Commission with perspectives on policy and regulation. We were also honored to welcome prestigious academic views from the Carnegie Mellon University and Zhejiang University. Along with the keynote speeches, we had the opportunity to debate the impact of massive IoT deployments in future spectrum use with a panel gathering high-profile experts in the field, thanks to the help of the conference panel chair.

The committee also wanted to emphasize how cognitive radio techniques could be applied in different areas of wireless communication in a pragmatic way, in a context where cognitive radio is often perceived as a theoretical approach. With this in mind, a significant number of demonstrations and exhibits were presented at CROWNCOM. Seven demonstrations and two exhibition booths were present during the conference, showcasing the maturity level of the technology. In this regard, we would like to express our gratitude to the conference demonstration and exhibit chair for his outstanding role in the organization of the demonstration area in conjunction with the conference local chairs. In addition, we decided to integrate a series of workshops that

can be seen as special sessions where specific aspects of cognitive radio regarding applications, regulatory frameworks, and research were discussed. Four such workshops were organized as part of the conference embracing topics such as modern spectrum management, 5G technology enabler, software-defined networks and virtualization, and cloud technologies. This year, delegates could also attend three tutorials organized as part of the conference. We are thankful to the tutorial chair for organizing these tutorials.

Of course, the core of the conference was composed of regular paper presentations covering the seven tracks of the conference topics. We received a fair number of submissions, out of which 62 high-quality papers were selected. The paper selection was the result of a rigorous and high-standard review process involving more than 150 Technical Program Committee (TPC) members with a rejection rate of 25 %. We are grateful to all TPC members and the 14 track co-chairs for providing high-quality reviews. This year, the committee decided to reward the best papers of the conference in two ways. First, the highest-ranked presented papers were invited to submit an extended version of their work to a special issue of the *EURASIP Journal on Wireless Communications and Networking* (Springer) on “Dynamic Spectrum Access and Cognitive Techniques for 5G.” This special issue is planned for publication at the end of 2016. Then, a smaller number of papers with the highest review scores competed for the conference “Best Paper Award,” sponsored by Orange. The committee would like to thank the authors for submitting high-quality papers to the conference, thereby maintaining COWNCOM as a key conference in the field.

Of course the organization of this event would have been impossible without the constant guidance and support of the European Alliance for Innovation (EAI). We would like to warmly thank the organization team at EAI and in particular Anna Horvathova, the conference manager of CROWNCOM 2016. We would also like to express our thanks to the team at CEA: our conference secretary and the conference webchair for their steady support and our local chairs for setting up all the logistics.

Finally, the committee would like express its gratitude to the conference sponsors. In 2016, CROWNCOM was very pleased by the support of a large number of prestigious sponsors, stressing the importance of the conference for the wireless community. Namely, we express our warmest thanks to Keysight Technologies, Huawei, Nokia, National Instruments, Qualcomm, and the European ForeMont project.

We hope you will enjoy the proceedings of CROWNCOM 2016.

April 2016

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Cognitive Radio Oriented Wireless Networks
11th International Conference, CROWNCOM 2016,
Grenoble, France, May 30 - June 1, 2016, Proceedings
Noguet, D.; Moessner, K.; Palicot, J. (Eds.)
2016, XVIII, 769 p. 340 illus., Softcover
ISBN: 978-3-319-40351-9