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Wei Xiang · Fengling Han ·
Tran Khoa Phan (Eds.)

Broadband Communications, Networks, and Systems

12th EAI International Conference, BROADNETS 2021
Virtual Event, October 28–29, 2021
Proceedings

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Preface

We are delighted to introduce the proceedings of 12th EAI International Conference on Broadband Communications, Networks, and Systems (BROADNETS 2021). This conference brought together researchers, developers, and practitioners around the world who are leveraging and developing smart communications networks with a particular focus on 5G applications. The theme of BROADNETS 2021 was ‘Beyond 5G (B5G) Enabled Advanced Manufacturing’.

5G mobile networks and beyond (B5G) provide high bandwidth capacity, low latency, and connectivity to enable a new generation of applications, services, and business opportunities that have not been seen before. Smart sensors, enabled by 5G/B5G, are coordinated and communicate in real time to complete the manufacturing process. These smart sensors will be able to assess the quality of components that are being manufactured in real time, reducing re-working requirements. This has the potential to revolutionize modern industrial processes and applications including agriculture, manufacturing, and business communications through a combination of AI-based planning, edge computing, high bandwidth with low latency, connected machines, AR-enabled workers, and integrated logistics. Beyond 5G, one can anticipate that there will be a more dynamic, self-regulating, and self-adjusting process that will translate into agility, speed, and higher productivity.

The technical program of BROADNETS 2021 consisted of 24 full papers. The conference also features two international workshops on 5G-enabled Smart Building: Technology and Challenge, and 5G: The Advances in Industry. Aside from the high-quality technical paper presentations, the technical program also featured two keynote speeches by distinguished researchers Qing-Long Han (Swinburne University of Technology, Australia) on ‘Multi-agent Systems Based Distributed Control, Optimization, and Energy Management in Smart Grids’ and Mehdi Bennis (University of Oulu, Finland) on ‘Communication-efficient and Distributed ML Over Wireless Networks’.

Coordination with the steering chair, Imrich Chlamtac, was essential for the success of the conference. We sincerely appreciate the chair’s constant support and guidance. It was also a great pleasure to work with such an excellent organizing committee team for their hard work in organizing and supporting the conference. In particular, we are grateful to the Technical Program Committee, who have completed the peer-review process for technical papers and helped to put together a high-quality technical program. We are also grateful to the conference managers for their support and all the authors who submitted their papers to the BROADNETS 2021 conference and workshops.

We strongly believe that BROADNETS provides a good forum for all researchers, developers, and practitioners to discuss all science and technology aspects that are relevant to broadband communications networks. We also expect that the future

BROADNETS conferences will be as successful and stimulating as this year's, as indicated by the contributions presented in this volume .

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