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Cooperative Radio Communications for Green Smart Environments

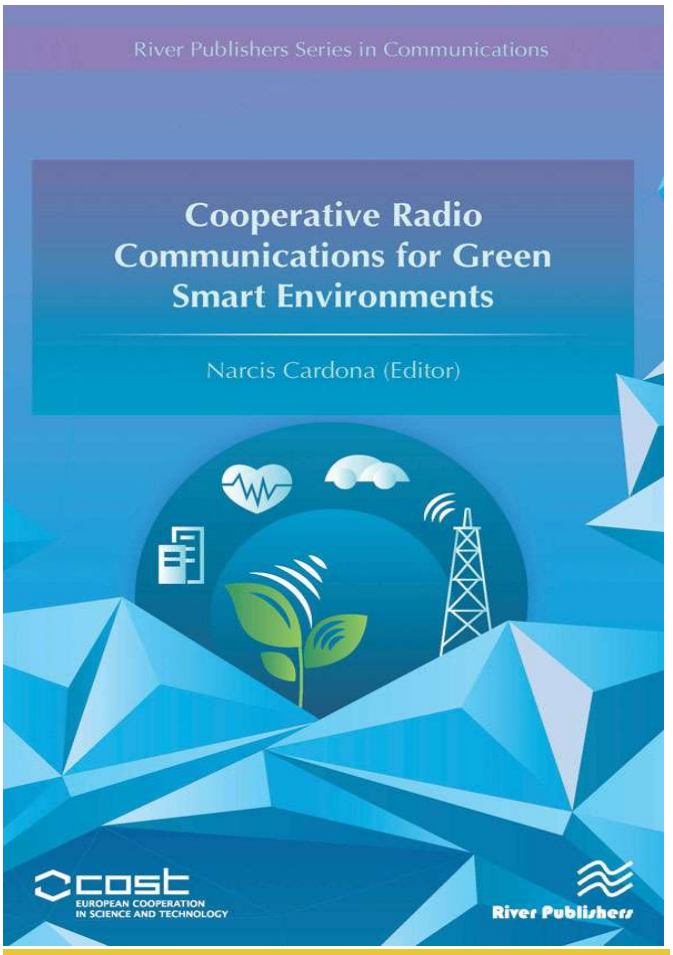
Editor: Narcis Cardona, Chairman of EU COST IC1004 and Universitat Politecnica de Valencia, Spain

The demand for mobile connectivity is continuously increasing, and by 2020 Mobile and Wireless Communications will serve not only very dense populations of mobile phones and nomadic computers, but also the expected multiplicity of devices and sensors located in machines, vehicles, health systems and city infrastructures. Future Mobile Networks are then faced with many new scenarios and use cases, which will load the networks with different data traffic patterns, in new or shared spectrum bands, creating new specific requirements. This book addresses both the techniques to model, analyse and optimise the radio links and transmission systems in such scenarios, together with the most advanced radio access, resource management and mobile networking technologies.

This text summarises the work performed by more than 500 researchers from more than 120 institutions in Europe, America and Asia, from both academia and industries, within the framework of the COST IC1004 Action on "Cooperative Radio Communications for Green and Smart Environments". The book will have appeal to graduates and researchers in the Radio Communications area, and also to engineers working in the Wireless industry.

Topics discussed in this book include:

- Radio waves propagation phenomena in diverse urban, indoor, vehicular and body environments
- Measurements, characterization, and modelling of radio channels beyond 4G networks
- Key issues in Vehicle (V2X) communication
- Wireless Body Area Networks, including specific Radio Channel Models for WBANs
- Energy efficiency and resource management enhancements in Radio Access Networks
- Definitions and models for the virtualised and cloud RAN architectures
- Advances on feasible indoor localization and tracking techniques
- Recent findings and innovations in antenna systems for communications
- Physical Layer Network Coding for next generation wireless systems
- Methods and techniques for MIMO Over the Air (OTA) testing



River Publishers Series in Communications and Networking

ISBN: 9788793379152
e-ISBN: 9788793379145
Available From: June 2016
Price: € 90.00 $ 115.00

KEYWORDS:
4G/5G Mobile Communications, Radio Access Networks, Wireless Communications Systems, Vehicular Communications, Wireless Body Area Communications, Green Communications, Radio Access Networks Architectures, Cooperative Strategies, Cooperative Networks, Evolved Physical Layer, Radio Channel Measurement, Radio Channel Modelling, Antenna Systems for Communications, Over the Air Testing, MIMO Systems, Green ICT, Smart Environments

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