

# Preface

This book has emerged as a joint effort of the fellows and some of the supervisors in the Marie Curie Initial Training Network MULTI-POS, funded by EU FP7 grant number 316528. When we have started to plan the writing of this book in 2015, we knew this would be a challenging endeavour, not only because it was to be written principally by early stage researchers but also because it was aiming at giving the full landscape of what wireless positioning world entails, from physical layer to application layer, and at explaining the inherent links between the navigation and communication worlds, which are typically addressed separately and by different research communities.

Our book aims at addressing all different layers and aspects involved in wireless positioning, from physical layer to application layer, from outdoor to indoor and seamless positioning and from signal and system design to business models and location-based services. Each chapter is dedicated to one or a couple of these different issues, and each chapter aims at presenting the basic overview of the topic, the main challenges and the main existing solutions. The book chapters also aim at raising potential new research questions and pointing out which issues are still currently not solved in the addressed area.

The detailed goals of this book are:

- To make the positioning technology more accessible for people working in other disciplines
- To give an overview of multiple positioning techniques, providing insight on the pros, cons and challenges related to them
- To provide inspiration to the readers on how to utilize the positioning technology and location data available
- To explain some of the available tools existing in the literature to investigate the world of the location-based services
- To open new avenues in ways of thinking about the future joint communication and navigation worlds
- To offer solutions to deal with mobility challenges to fresh graduates interested in cross-sector cross-field international careers.

The target audience of the book includes the following groups:

- Young students and professionals embarking on an international career
- Academic and industrial members involved or interested in Marie Curie EU programmes
- EU policymakers involved in future definitions of research mobility programmes
- People without strong technical background who want to understand the principles of wireless navigation and positioning and the connections between the communication and navigation worlds
- Business developers, city council workers, entrepreneurs and innovators who want to augment their technical background in the location-based services, especially those related to emergency, environment and health.

These being said, we hope that by the current book, we will bridge some of the missing gaps in the existing literature and we will provide to the general audience a comprehensive book on the multi-technology positioning.

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