

Lecture Notes in Geoinformation and Cartography

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The scope of Lecture Notes in Geoinformation and Cartography spans the range of interdisciplinary topics in a variety of research and application fields. The type of material published traditionally includes:

- proceedings that are peer-reviewed and published in association with a conference;
- post-proceedings consisting of thoroughly revised final papers; and
- research monographs that may be based on individual research projects.

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- tutorials or collections of lectures for advanced courses;
- contemporary surveys that offer an objective summary of a current topic of interest; and
- emerging areas of research directed at a broad community of practitioners.

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AGILE 2015

Geographic Information Science
as an Enabler of Smarter Cities
and Communities

 Springer

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Preface

Since 1998, the Association of Geographic Information Laboratories for Europe (AGILE) promotes academic teaching and research on geographic information at the European level. Its annual conference reflects the variety of topics, disciplines and actors in this research area. It provides a multidisciplinary forum for scientific knowledge production and dissemination and has gradually become the leading Geographic Information Science Conference in Europe.

For the ninth consecutive year, the AGILE conference full papers are published as a book by Springer-Verlag. This year, 48 documents were submitted as full papers, of which 20 were accepted for publication in this volume, after a thorough selection and review process. Thus, we congratulate the authors for the quality of their work and thank them for their contribution to the success of the AGILE conference and book series. We also take this opportunity to acknowledge the contribution of the numerous reviewers for providing us with their thorough judgements. Their work was fundamental to select the very best papers and ultimately for the quality of this volume.

Under the title *Geographic information science as an enabler of smarter cities and communities*, this book tries to envision ways in which GIScience may contribute to a more intelligent and sustainable way of managing resources in our cities and communities.

The scientific papers published in this volume cover a wide range of associated topics. The first part covers challenges in harnessing the power of user-generated content, which will surely change the way we understand and manage urban environments in the future. The second part focuses on methods to extract knowledge and detect changes and anomalies from the massive databases available today, which will keep on getting bigger, providing us with new opportunities to better understand reality. The third part proposes new ways of gaining insight and improving the human mobility conundrum. The fourth, and last part, confronts some foundational problems related to the computational representation and reasoning in GIScience.

Organizing the program of an international conference and editing a volume of scientific papers take time, effort and support. The input from the AGILE Council and Committees was important for us, and we are grateful to all members for their contributions.

We would also like to thank our sponsors, for their kind contributions to the 18th AGILE Conference on Geographic Information Science and Springer-Verlag for their willingness to publish the accepted full papers in their academic series Springer Lecture Notes in Geoinformation and Cartography.

Lisbon
Guimarães
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February 2015

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