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Information Fusion and Geographic Information Systems (IF&GIS 2013)

Environmental and Urban Challenges

Springer

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Preface

This volume collects the papers presented at the Sixth International Workshop "Information Fusion and Geographical Information Systems" (IF&GIS 2013), which was held from May 12 to 15, 2013, in Saint Petersburg, Russia. The workshop was organized by the Saint Petersburg Institute for Informatics and Automation, part of the Russian Academy of Sciences (SPIIRAS). IF&GIS is a biannual international workshop intended to promote the consolidation of efforts of academics and industrials from a wide range of disciplines, including computer science, geography, statistics, mathematics, hydrography, geomorphology, environmental, and urban fields. 2013 marks the 10-year milestone since the first international IF&GIS workshop was launched. This year, IF&GIS was specifically focused on environmental issues from global to local scales.

The objective of this workshop was to present the latest scientific and technological innovations, as well as geographic information system (GIS) applications to decision-making support systems intended for monitoring environmental and global warming problems and to monitoring, planning, and simulation aimed at sustaining the maritime presence in the Arctic. The scope of the Sixth IF&GIS workshop, and hence its proceedings, addresses several GIS and environmental research issues concerning modeling, analysis, information processing and visualization, as well as intelligent GIS applications to decision-making support systems. The papers selected by the International Program Committee reflect problems faced by multidisciplinary approaches to scientific domains to the extent that they address GIS fundamentals and their application to urban and environmental challenges.

While traditional topics at GIS conferences, such as ontologies and modeling on GIS and data security for GIS, are well represented and continue to be of importance, several new domains with an emphasis on urban and environmental challenges are now emerging. Maritime GIS is also at the cutting edge of novel applications intended to provide navigational safety so as to sustain a maritime presence in the Arctic, and it was addressed by several contributions presented at the workshop.

The submission process attracted 38 abstracts from 14 countries, and 26 abstracts were selected for full paper submission. After thorough reviewing, the Program Committee accepted 19 papers from 8 countries for publication, including two editorial papers. The accepted papers were assigned to the following five

sessions: Ontologies and Modeling on GIS; Algorithms and Computational Issues for GIS; Data Security for GIS; Urban GIS; and Marine and Coastal GIS (for the Arctic Region). The IF&GIS 2013 program was further enriched by the contribution of our distinguished invited speaker: Assistant Professor Cosimo Stallo from Signal Processing and Satellite Navigation Institute of Electrical and Electronics Engineers (IEEE) Aerospace and Electronic Systems Society (AESS) in Italy, whose paper is also included in the volume.

The success of the workshop was assured by the combined efforts of sponsors, organizers, reviewers, and participants. We would like to gratefully acknowledge the contributions of the Program Committee members and thank all reviewers for their support and hard work. Our sincere gratitude also goes to all participants and all the authors of submitted papers. We are grateful to our sponsors, the Russian Academy of Sciences and the US Office of Naval Research Global (ONRGlobal), for their generous support. Finally, we also wish to extend our gratitude to Springer's team, managed by Dr. Christian Witschel and Agata Oelschlager, for their help and collaboration.

May 2013

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