Geoinformation Metadata In Inspire And Sdi Understanding Editing Publishing Lecture Notes In Geoinformation And Cartography

The book presents a collection of accepted papers from the 3DGeoinfo 2015 international conference held in Kuala Lumpur, Malaysia from October 28 – 30, 2015. All papers underwent double-blind review by experts from around the globe. The conference brought together pioneering international researchers and practitioners to facilitate the dialogue on emerging topics in the field of 3D geo-information. The focus areas include: - Data Collection and Modeling: advanced approaches for 3D data collection, reconstruction and methods for representation- Data Management: topological, geometrical and network models for maintenance of 3D geoinformation- Data Analysis and Visualization: frameworks for representing 3D spatial relationships, 3D spatial analysis and algorithms for navigation, interpolation, advanced VR, AR and MR visualisation, as well as 3D visualization on mobile devices- 3D Applications: city models, Cadastre, LBS, etc.

This book constitutes the refereed proceedings of the 9th IFIP WG 5.11

International Symposium on Environmental Software Systems, ISESS 2011, held in Brno, Czech Republic, in June 2011. The 68 revised full papers presented together with four invited talks were carefully reviewed and selected from numerous submissions. The papers are organized in the following topical sections: eEnvironment and cross-border services in digital agenda for Europe; environmental information systems and services - infrastructures and platforms; semantics and environment; information tools for global environmental assessment; climate services and environmental tools for urban planning and climate change - applications and services.

This book is a printed edition of the Special Issue Innovative Geo-Information Tools for Governance that was published in IJGI

Geo-information technology can be of considerable use in disaster management, but with considerable challenge in integrating systems, interoperability and reliability. This book provides a broad overview of geo-information technology, software, systems needed, currently used and to be developed for disaster management. The text invites discussion on systems and requirements for use of geo-information under time and stress constraints and unfamiliar situations, environments and circumstances.

This book presents the latest research developments in geoinformation science,

which includes all the sub-disciplines of the field, such as: geomatic engineering, GIS, remote sensing, digital photogrammetry, digital cartography, etc.

The awareness of environment protection is a great achievement of humans; an expression of self-awareness. Even though the idea of living while protecting the environment is not new, it has never been so widely and deeply practiced by any nations in history like it is today. From the late 90s in the last century, the surprisingly fast dev

This book constitutes the refereed proceedings of the Third International Conference on Geographic Information Secience, GIScience 2004, held in Adelphi, MD, USA in October 2004. The 25 revised full papers presented were carefully reviewed and selected from many submissions. Among the topics addressed are knowledge mapping, geo-self-organizing maps, space syntax, geospatial data integration, geospatial modeling, spatial search, spatial indexing, spatial data analysis, mobile ad-hoc geosensor networks, map comparison, spatiotemporal relations, ontologies, and geospatial event modeling.

Written by a renowned expert, Geoinformation: Remote Sensing, Photogrammetry and Geographic Information Systems, Second Edition gives you an overarching view of how remote sensing, photogrammetry, and geographic information systems work together in an interdisciplinary manner. The book

presents the required basic background of the geoinformatics concept in which the different methodologies must be combined. It details the principal components of remote sensing, from theoretical principles to advanced image analysis and interpretation techniques, sensor components, and operating platforms. New and Updated in the Second Edition: Web-based image viewing with Google Earth Aerial platforms Existing digital photogrammetric software systems, including Intergraph image station, Autodesk, and Oracle Spatial Land management and cadaster Imaging sensors such as laser scanning, image spectrometry, radar imaging, and radar interferometry With the advent of high-resolution satellite systems in stereo, the theory of analytical photogrammetry restituting 2D image information into 3D is of increasing importance, merging the remote sensing approach with that of photogrammetry. This text describes the fundamentals of these approaches in detail, with an emphasis on global, regional, and local applications. It provides a short introduction to the GPS satellite positioning system in the context of data integration. An extensive overview of the basic elements of GIS technologies and data management approaches, as well as the widely employed positioning systems such as GPS and GSM networks, complete the presentation of the technological framework for geoinformation. Appropriate for GIS courses at all levels, the book proceeds

beyond the science and technology to tackle cost considerations and practical implementation issues, giving you a starting point for multidisciplinary new activities and services in the future.

In the wake of the so-called information technology revolution, many stakeholders from the public and private sectors (including citizens) have indeed grown accustomed to the promise and usability of spatial data infrastructures (SDI) for data access, use, and sharing. Analyzing the obstacles as well as the processes and mechanisms of integration and implementation, Spatial Data Infrastructures in Context: North and South investigates the technological and the non-technological aspects of the widespread adoption of spatial data infrastructures. Supporting theoretical issues with empirical studies, the editors pay particular attention to the non-technological aspects of organizational, financial, and legal issues including owner rights, liability, copyrights, and compatibility with precedent and supercedent laws. The authors also highlight the importance of understanding the local environment and circumstances in the process of tailoring the approaches to the conditions that characterize societies of different cultural, institutional, and economic settings. Designed to improve the accessibility, interoperability, and affordability of spatial data, the book focuses on the increasing challenges associated with integrating individuals and organizations into a network to support (1) public authorities and administrations at various levels, (2) thematic user communities, (3) enterprises, and (4) citizen-oriented society as a whole. It addresses

the implementation and development of spatial data infrastructures for a wide range of themes, applicable technical standards and protocols, and specific organizational issues unique to data policy. Highlighting the potential for profound changes to the access, use, and exchange of spatial data for citizens, organizations, and geographically related applications, and therefore to the role and interaction of the stakeholders from the public and private sectors, this timely contribution provides new insights into improving our understanding of the increasing relevance, applicability, and value of spatial data infrastructures.

This open access book is based on "Spationomy ? Spatial Exploration of Economic Data", an interdisciplinary and international project in the frame of ERASMUS+ funded by the European Union. The project aims to exchange interdisciplinary knowledge in the fields of economics and geomatics. For the newly introduced courses, interdisciplinary learning materials have been developed by a team of lecturers from four different universities in three countries. In a first study block, students were taught methods from the two main research fields. Afterwards, the knowledge gained had to be applied in a project. For this international project, teams were formed, consisting of one student from each university participating in the project. The achieved results were presented in a summer school a few months later. At this event, more methodological knowledge was imparted to prepare students for a final simulation game about spatial and economic decision making. In a broader sense, the chapters will present the

methodological background of the project, give case studies and show how visualisation and the simulation game works.

This book approaches geological, geomorphological and topographical mapping from the point in the workflow at which science-ready datasets are available. Though there have been many individual projects on dynamic maps and online GISs, in which coding and data processing are given precedence over cartographic principles, cartography is more than “just” processing and displaying spatial data. However, there are currently no textbooks on this rapidly changing field, and methods tend to be shared informally. Addressing this gap in the literature, the respective chapters outline many topics pertaining to cartography and mapping such as the role and definition of planetary cartography and (vs?) Geographic Information Science; theoretical background and practical methodologies in geological mapping; science-ready versus public-ready products; a goal/procedure-focused practical manual of the most commonly used software in planetary mapping, which includes generic (ArcGIS and its extensions, JMARS) and specific tools (HiView, Cratertools etc.); extracting topographic information from images; thematic mapping: climate; geophysics; surface modeling; change detection; landing site selection; shared maps; dynamic maps on the web; planetary GIS interfaces; crowdsourcing; crater counting techniques; irregular bodies; geological unit symbology; mapping center activities; and web services. All chapters were prepared by authors who have actually produced geological maps or GISs for NASA /

the USGS, DLR, ESA or MIIGAIK. Taken together, they offer an excellent resource for all planetary scientists whose research depends on mapping, and for students of astrogeology.

The prevalence of data science has grown exponentially in recent years. Increases in data exchange have created the need for standards and formats on handling data from different sources. Developing Metadata Applications Profiles is an innovative reference source that discusses the latest trends and techniques for effectively managing and exchanging metadata. Including a range of perspectives on schemas and application profiles, such as interoperability, ontology-based design, and model-driven approaches, this book is ideally designed for researchers, academics, professionals, graduate students, and practitioners actively engaged in data science.

Metadata research has emerged as a discipline cross-cutting many domains, focused on the provision of distributed descriptions (often called annotations) to Web resources or applications. Such associated descriptions are supposed to serve as a foundation for advanced services in many application areas, including search and location, personalization, federation of repositories and automated delivery of information. Indeed, the Semantic Web is in itself a concrete technological framework for ontology-based metadata. For example, Web-based social networking requires metadata describing people and their interrelations, and large databases with biological information use complex and detailed metadata schemas for more precise and

informed search strategies.There is a wide diversity in the languages and idioms used for providing meta-descriptions, from simple structured text in metadata schemas to formal annotations using ontologies, and the technologies for storing, sharing and exploiting meta-descriptions are also diverse and evolve rapidly. In addition, there is a proliferation of schemas and standards related to metadata, resulting in a complex and moving technological landscape — hence, the need for specialized knowledge and skills in this area.The Handbook of Metadata, Semantics and Ontologies is intended as an authoritative reference for students, practitioners and researchers, serving as a roadmap for the variety of metadata schemas and ontologies available in a number of key domain areas, including culture, biology, education, healthcare, engineering and library science.

The book is a new comprehensive textbook about creating and publishing geoinformation metadata. It is a compendium of knowledge about geoinformation metadata in INSPIRE Directive and Spatial Information Infrastructures. It contains the knowledge necessary to understand prior to the creation of geoinformation metadata. Metadata – “data about data” - describe the layers of spatial data (data series, services) responding to the questions: what?, why?, when?, who?, how? and where? Geoinformation metadata allows for exact search of the spatial data according to given criteria, regardless of where this data is located. On 15 May 2007 the EU Directive 2007/2/EC came into force establishing Infrastructure for Spatial Information in Europe -

INSPIRE. The proper functioning of the infrastructure for spatial information would not be possible without the metadata.

Offers New Insight on Uncertainty Modelling Focused on major research relative to spatial information, Uncertainty Modelling and Quality Control for Spatial Data introduces methods for managing uncertainties—such as data of questionable quality—in geographic information science (GIS) applications. By using original research, current advancement, and emerging developments in the field, the authors compile various aspects of spatial data quality control. From multidimensional and multi-scale data integration to uncertainties in spatial data mining, this book launches into areas that are rarely addressed. Topics covered include: New developments of uncertainty modelling, quality control of spatial data, and related research issues in spatial analysis Spatial statistical solutions in spatial data quality Eliminating systematic error in the analytical results of GIS applications A data quality perspective for GIS function workflow design Data quality in multi-dimensional integration Research challenges on data quality in the integration and analysis of data from multiple sources A new approach for imprecision management in the qualitative data warehouse A multi-dimensional quality assessment of photogrammetric and LiDAR datasets based on a vector approach An analysis on the uncertainty of multi-scale representation for street-block settlement Uncertainty Modelling and Quality Control for Spatial Data serves university students, researchers and professionals in GIS, and investigates the uncertainty modelling and quality control

in multi-dimensional data integration, multi-scale data representation, national or regional spatial data products, and new spatial data mining methods.

This book gathers various perspectives on modern map production. Its primary focus is on the new paradigm of “sharing and reuse,” which is based on decentralized, service-oriented access to spatial data sources. Service-Oriented Mapping is one of the main paradigms used to embed big data and distributed sources in modern map production, without the need to own the sources. To be stable and reliable, this architecture requires specific frameworks, tools and procedures. In addition to the technological structures, organizational aspects and geographic information system (GIS) capabilities provide powerful tools to make modern geoinformation management successful. Addressing a range of aspects, including the implementation of the semantic web in geoinformatics, using big data for geospatial visualization, standardization initiatives, and the European spatial data infrastructure, the book offers a comprehensive introduction to decentralized map production. .

"This book examines state-of-the-art developments in coastal informatics (e.g., data portals, data/ metadata vocabularies and ontologies, metadata creation/ extraction/ cross-walking tools, geographic and information management systems, grid computing) and coastal mapping (particularly via Internet map servers and web-based geographical information and analysis)"--Provided by publisher.

"This handbook coalesces worldwide investigations, thoughts, and practices in the area

of Green ICT, covering the technical advances, methodological innovations, and social changes that result in enhancements and improvements in business strategies, social policies, and technical implementations"--Provided by publisher.

Separation distinction between the roles of the producer and consumer has become blurred with the development of new science and technologies enabling the emergence of the prosumer, or the active consumer. In the IT sector, the role of the end-user has broadened to include innovation and development practices in addition to the traditional consumer activities. As such, businesses must create opportunities for product development and innovation by the consumers. Frameworks of IT Prosumption for Business Development investigates the latest empirical research on active use of information technology resources, enabling users with new methodologies, tools, and opportunities to impact application development processes. The objective of this reference book is to mobilize end-users to take a more active role in their own IT solutions, which will in turn assist in the development of best practices in IT at all levels.

For the seventh consecutive year, the AGILE promotes the publication of a book collecting high-level scientific papers from unpublished fundamental scientific research in the field of Geographic Information Science. As the agenda for Europe 2020 is currently being set, this book demonstrates how geographic information science is at the heart of Europe. The contributions open perspectives for innovative services that will strengthen our European economy, and which will inform citizens about their

environment while preserving their privacy. The latest challenges of spatial data infrastructures are addressed, such as the connection with the Web vocabularies or the representation of genealogy. User generated data (through social networks or through interactive cameras and software) is also an important breakthrough in our domain. A trend to deal more and more with time, events, ancient data, a nd activities is noticeable this year as well. This volume collects the 23 best full papers presented during the 16th AGILE Conference on Geographic Information Science, held between 14 and 17 May 2013 in Leuven, Belgium.

For the fourth consecutive year, the Association of Geographic Infor- tion Laboratories for Europe (AGILE) promoted the edition of a book with the collection of the scientific papers that were submitted as full-papers to the AGILE annual international conference. Those papers went through a th competitive review process. The 13 AGILE conference call for fu- papers of original and unpublished fundamental scientific research resulted in 54 submissions, of which 21 were accepted for publication in this - lume (acceptance rate of 39%). Published in the Springer Lecture Notes in Geoinformation and Car- th graphy, this book is associated to the 13 AGILE Conference on G- graphic Information Science, held in 2010 in Guimarães, Portugal, under the title “Geospatial Thinking”. The efficient use of geospatial information and related technologies assumes the knowledge of concepts that are fundamental components of Geospatial Thinking, which is built on reasoning processes, spatial

conc- tualizations, and representation methods. Geospatial Thinking is associated with a set of cognitive skills consisting of several forms of knowledge and cognitive operators used to transform, combine or, in any other way, act on that same knowledge. The scientific papers published in this volume cover an important set of topics within Geoinformation Science, including: Representation and Visualisation of Geographic Phenomena; Spatiotemporal Data Analysis; Geo-Collaboration, Participation, and Decision Support; Semantics of Geoinformation and Knowledge Discovery; Spatiotemporal Modelling and Reasoning; and Web Services, Geospatial Systems and Real-time Appli- tions.

This book presents the peer-reviewed proceedings of the 2nd International Conference on Computational and Bioengineering (CBE 2020) jointly organized in virtual mode by the Department of Computer Science and the Department of BioScience & Sericulture, Sri Padmavati Mahila Visvavidyalayam (Women's University), Tirupati, Andhra Pradesh, India, during 4–5 December 2020. The book includes the latest research on advanced computational methodologies such as artificial intelligence, data mining and data warehousing, cloud computing, computational intelligence, soft computing, image processing, Internet of things, cognitive computing, wireless networks, social networks, big data analytics, machine learning, network security, computer networks and communications, bioinformatics, biocomputing/biometrics, computational biology, biomaterials, bioengineering, and medical and biomedical informatics.

This book provides an overview of research in the field of spatial data quality, which looks at understanding, measuring, describing, and communicating information about the imperfections of geographic data used by GIS and other mapping software. It presents results from a number of research projects in this area, from the assessment of data accuracy to legal aspects relating to the quality of geographic information. The international contributors focus on the relationship between the quality of geographic data and the quality of decisions based on such data.

"This book discusses the complete range of contemporary research topics such as computer modeling, geometry, geoprocessing, and geographic information systems"--Provided by publisher.

CD-ROM contains: Four Microsoft PowerPoint presentations and interactive mapping exercises, some of which extend the scholarly material and addressess new issues related to historical GIS.

The volume deals with the effects of digitization on spatial and especially landscape construction processes and their visualization. A focus lies on the generation mechanisms of 'landscapes' with digital tools of cartography and geomatics, including possibilities to model and visualize non-visual stimuli, but also spatial-temporal changes of physical space. Another focus is on how virtual spaces have already become part of the social and individual construction of landscape. Potentials of combining modern media of spatial visualization and (constructivist) landscape research are discussed.

World Spatial Metadata Standards represents years of work by the ICA Spatial Data Standards Commission during the 1995-2003 ICA cycles. It consists of an Introduction and six Regional Summary chapters that describe the spatial metadata activities happening in Europe, North America, Asia/Pacific, Latin America, Africa/Middle East, and the ISO community. These chapters provide the broader context and description of the milieu in which these standards operate, so that the reader can more easily understand the scientific and technical framework from whence a particular standard has emerged. The third section is a complete listing of all of the three levels of scientific and technical characteristics, and their meaning by the inclusion of a set of definitions for metadata terms used in the book. The fourth section, and by far the largest, contains 22 chapters that assess each of the major national and international spatial metadata standards in the world, and also contains a few representative subject matter profile derived from a major standard. They have been carried out in terms of all three levels of characteristics. Each assessment has been carried out by a Commission member who has been an active participant in the development of the standard being assessed in the native language of that standard. The fifth section contains a summary cross-table wall size summary chart that includes all 22 standards and profiles that are cross tabulated by 70 of the crucial characteristics. The columns provide a thumbnail sketch of each individual standard, while the rows facilitate a quick comparison of individual critical characteristics across all of the 22 standards and profiles. Many readers of our

previous book have begun their standards evaluation process with this cross-table. This current book on spatial metadata standards has been purposely designed to serve as a companion working volume to the 1997 book the Commission published on Spatial Data Transfer Standards, Moellering & Hogan, Editors, ISBN 008042433. Assesses the National and International Spatial Metadata Standards & Profiles in their native languages, and then reports the analysis in a scientifically consistent manner in a widely used scientific language (English) Provides a summary Crosstable of the 22 Spatial Metadata Standards/Profiles in a large wall-sized table highlighting 70 of the most important scientific characteristics Provides the scientific and technical detail for each of the 22 Standards/Profiles to 12 primary levels, 58 second levels, and about 278 tertiary levels. Scientific and technical characteristics can be used for a wide variety of uses with spatial metadata and associated standards

The book comprises innovative research presented at the 14th Conference of the Association of Geographic Information Laboratories in Europe (AGILE), held in 2011 in Utrecht, The Netherlands. The scientific papers cover a large variety of fundamental research topics as well as applied research in Geoinformation Science including measuring spatiotemporal phenomena, quality and semantics, spatiotemporal analysis, modeling and decision support as well as spatial information infrastructures. The book is aimed at researchers, practitioners and students who work in various fields and disciplines related to Geoinformation Science and technology.

This open access book offers a summary of the development of Digital Earth over the past twenty years. By reviewing the initial vision of Digital Earth, the evolution of that vision, the relevant key technologies, and the role of Digital Earth in helping people respond to global challenges, this publication reveals how and why Digital Earth is becoming vital for acquiring, processing, analysing and mining the rapidly growing volume of global data sets about the Earth. The main aspects of Digital Earth covered here include: Digital Earth platforms, remote sensing and navigation satellites, processing and visualizing geospatial information, geospatial information infrastructures, big data and cloud computing, transformation and zooming, artificial intelligence, Internet of Things, and social media. Moreover, the book covers in detail the multi-layered/multi-faceted roles of Digital Earth in response to sustainable development goals, climate changes, and mitigating disasters, the applications of Digital Earth (such as digital city and digital heritage), the citizen science in support of Digital Earth, the economic value of Digital Earth, and so on. This book also reviews the regional and national development of Digital Earth around the world, and discusses the role and effect of education and ethics. Lastly, it concludes with a summary of the challenges and forecasts the future trends of Digital Earth. By sharing case studies and a broad range of general and scientific insights into the science and technology of Digital Earth, this book offers an essential introduction for an ever-growing international audience.

Geoinformation Metadata in INSPIRE and SDIUnderstanding. Editing. PublishingSpringer Science & Business Media

This title was first published in 2003. With the increasing use of GIS in industrialised and developing countries, the availability of spatial data has become an issue that affects many public and private sector organisations. They are faced with the high cost and substantial effort involved in the generation of spatial data and so the sharing of this data is increasingly being seen as a way of overcoming expense and easing availability and access. But this can provide a way of using GIS effectively only if the key players involved in the use and supply of spatial data are willing to share. This book employs a theory from social psychology as an organising framework to systematize the determinants of organisations' spatial data sharing behaviour. It develops a model which explains the likely willingness of key individuals within organisations to engage in spatial data exchanges across organisational boundaries and then tests this on a survey based in South Africa.

Access, distribution and processing of Geographic Information (GI) are basic preconditions to support strategic environmental decision-making. The heterogeneity of information on the environment today available is driving a wide number of initiatives, on both sides of the Atlantic, all advocating both the strategic role of proper management and processing of environme- related data as well as the importance of harmonized IT infrastructures designed to better monitor and manage the environment.

The extremely wide range of often multidimensional environmental information made available at the global scale poses a great challenge to technologists and scientists to find extremely sophisticated yet effective ways to provide access to relevant data patterns within such a vast and highly dynamic information flow. In the past years the domain of 3D scientific visualization has developed several solutions designed for operators requiring to access results of a simulation through the use of 3D visualization that could support the understanding of an evolving phenomenon. However 3D data visualization alone does not provide model and hypothesis-making neither it provide tools to validate results. In order overcome this shortcoming, in recent years scientists have developed a discipline that combines the benefits of data mining and information visualization, which is often referred to as Visual Analytics (VA).

This book constitutes a notable contribution to investigate and present the capabilities of Geographic Information Systems (GIS) and their applicability and usefulness in environmental-related applications and sciences. The focus is on the design, creation, development and operation of integrated Web-based GIS applications for weather, marine and atmospheric environments, and the Earth's magnetic field. More specifically, the aim of this book is to present characteristic applications of GIS to environmental monitoring including GIS solutions for eco-mapping sea and port-related parameters, climate changes, and geomagnetic field. In the first part of the book, the description of every application includes the user requirements, the design and development stages performed and the presentation of the final outcome, its capabilities and services. The Web-based applications are developed through different

innovative approaches, such as cloud GIS and Google Apps for GIS, justifying the merit of WebGIS in the world of the environmental applications. The second part of the book provides an overview of geomagnetic field parameters and reveals the potential of using GIS for modeling and analyzing of the Earth's magnetic (geomagnetic) field and its parameters. Here, the authors present the recently introduced phenomenon called “geomagnetic pseudostorm”, which is modeled and further analyzed here with GIS technology and tools. This book appeals to those interested in various areas where spatial information becomes of paramount relevance (e.g. social and economic research and mapping, environmental and climate research, decision support systems, public services, and especially for geomagnetic field variations and for the design of warning systems for natural disasters). It presents modern methods and approaches to visualize and analyze spatial information using innovative techniques, procedures, and tools of WebGIS technology. In this book, the readers find a valuable companion in their efforts to design and develop their own WebGIS applications, as it includes useful examples of developing (Web)GIS applications regarding the monitoring of marine and atmospheric environments, as well as applications that deal with meteorological issues and the Earth’s magnetic field along with solar activity (space weather information).This book can also serve as a useful reference source for graduates, researchers and professionals related to the areas indicated above.

This section gives a description of notions used throughout this study. Current achievements in developing action-centered ontologies are also discussed. 2.1 Ontologies In the context of information extraction and retrieval, different kinds of ontologies can be distinguished [15]: • Top-level ontologies describe very general concepts like space and time, not depending on a

particular domain, • Domain ontologies and task ontologies describe the vocabulary related to a generic domain or kind of task, detailing the terms used in the top-level ontology, • Application ontologies describe the concepts that depend on the particular domain and task within a specific activity. Several investigations have been conducted to bring actions (tasks) to bear on - tologies. Among them are Chandrasekaran et al. [6] and Mizoguchi et al. [23] in the fields of AI and Knowledge Engineering. For the geospatial domain, Kuhn [21] and Raubal and Kuhn [26] have attempted to support human actions in ontologies for transportation. Acknowledging the importance of human actions in the geographic domain, a research workshop was held in 2002, bringing together experts from diff- ent disciplines to share the knowledge and work on this issue [1]. Camara [5], one of the workshop participants, has proposed that action-driven spatial ontologies are formed via category theory, for the case of emergency action plans.

This book highlights the latest improvements in cadastre with examples and case studies from various parts of the world. Authors from different continents, in association with national and international organizations and societies, present the most comprehensive forum to date for cadastre, offering a broad overview of land administration and contemporary perspectives on current research and developments, including surveying, land management, remote sensing and geo-information sciences. Cadastre is a universal concept and is defined as “the work of officially mapping and systemically registering the areas, borders and values of all kinds of land and property”. It is normally a parcel-based and up-to-date land information system containing a record of interests in land with rights, restrictions and responsibilities. It may be established for fiscal and legal purposes, to assist in management for better planning and other

administrative purposes, and to enable sustainable development and environmental protection. As such, “cadastre” is an important public inventory documenting the records of ownership, bordering and responsibility regarding the land with “title deeds” to parcels and answering the questions of “whose land, where and how much”. The materials included in the book can support courses at universities and related training institutions worldwide, and will greatly improve readers’ understanding of the scholarly fields involved in cadastre: land registration and management, surveying and mapping, and geo-information management, land governance, land taxation and public administration etc.

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This book constitutes the refereed proceedings of the 19th International Conference on Data Analytics and Management in Data Intensive Domains, DAMDID/RCDL 2017, held in Moscow, Russia, in October 2017. The 16 revised full papers presented together with three invited papers were carefully reviewed and selected from 75 submissions. The papers are organized in the following topical sections: data analytics; next generation genomic sequencing: challenges and solutions; novel approaches to analyzing and classifying of various astronomical entities and events; ontology population in data intensive domains; heterogeneous data integration issues; data curation and data provenance support; and temporal summaries generation.

Geo-Design. Advances in bridging geo-information technology and design bring together a wide variety of contributions from authors with backgrounds in urban planning, landscape architecture, education and geo-information technology presenting the latest insights and applications of geo-design. Geo-Design is here understood as a hybridization of the concepts

“Geo” – representing the modeling, analytical and visualization capacities of GIS, and “Design” – representing spatial planning and design, turning existing situations into preferred ones. Through focusing on interdisciplinary design-related concepts and applications of GIS international experts share their recent findings and provide clues for the further development of geo-design. This is important since there is still much to do. Not only in the development of geo-information technology, but especially in bridging the gap with the design-disciplines. The uptake on using GIS is still remarkably slow among landscape architects, urban designers and planners, and when utilized it is often restricted to the basic tasks of mapmaking and data access. Knowledge development and dissemination of applications of geodesign through research, publications, and education, therefore, remain key factors. This publication draws upon the insights shared at the Geodesign Summit Europe held at Delft University of Technology in 2014. All contributions in the book are double-blind reviewed by experts in the field.