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International Infrastructure Management Manual

Manual provides guidelines for best management practices for all infrastructure assets in the public and private sectors at the lowest life cycle cost.

Bridge Maintenance, Safety, Management, Resilience and Sustainability

Proceedings of the Sixth International IABMAS Conference,

Stresa, Lake Maggiore, Italy, 8-12 July 2012

CRC Press *Bridge Maintenance, Safety, Management, Resilience and Sustainability contains the lectures and papers presented at The Sixth International Conference on Bridge Maintenance, Safety and Management (IABMAS 2012), held in Stresa, Lake Maggiore, Italy, 8-12 July, 2012. This volume consists of a book of extended abstracts (800 pp) and a DVD (4057 pp) co*

Proceedings of the 19th International Symposium on Advancement of Construction Management and Real Estate

Springer *These conference proceedings cover an outstanding view for academics and professionals to share research findings on the latest developments in real estate and construction management. The Chinese Research Institute of Construction Management (CRIOCM) in collaboration with Chongqing University organized CRIOCM2014, the 19th International Symposium on "Advancement of Construction Management and Real Estate." The proceedings collect 105 selected papers addressing the following key themes: Sustainable Urbanization, Sustainable Construction, Urban Construction and Management, Affordable Housing, Urban Land Development and Utilization, Management for Large Infrastructure Projects, Green Construction Materials and Construction Waste Management, Development and Management for Mountainous Towns, Advancement of Construction Project Management, Redevelopment in Disaster Areas, Law and Policies for Construction and Real Estate, Information Technology for Construction Management and Real Estate and lastly Other Topics.*

Proceedings of 6th International Conference on Big Data and Cloud Computing Challenges

ICBCC 2019, UMKC, Kansas City, USA

Springer Nature *The book presents papers from the 6th International Conference on Big Data and Cloud Computing Challenges (ICBCC 2019), held at the University of Missouri, Kansas City, USA, on September 9 and 10, 2019 and organized in collaboration with VIT Chennai. The book includes high-quality, original research on various aspects of big data and cloud computing, offering perspectives from the industrial and research communities on how to address the current challenges in the field. As such it is a valuable reference resource for researchers and practitioners in academia and industry.*

Ethical Water Stewardship

Springer Nature *This interdisciplinary book brings philosophers and non-philosophers to the table to address questions of water ethics, specifically in terms of how moral questions inform decision making around water security at local, national, and international scales. Water security, which pertains to the experience of assured access to clean water, is a broad concept that intersects human rights, politics, economics, law, legislation, public health, trade, agriculture, and energy. Decisions made at each of these intersection points have ramifications for human well being, especially for the populations that are marginalized in a societal and political sense. In this book, the ethical dimensions of decision-making at those intersection points are explored, and real-world examples are used to tease out some key insights. It charts how ethical consideration can help shape a future in which everyone will be water secure.*

MANAGING COUNTY ASSETS AND LIABILITIES IN KENYA

Postdevolution Challenges and Responses

World Bank Publications

Concepts, Applications,

Experimentation and Analysis of Wireless Sensor Networks

Springer Nature *The new edition of this popular book has been transformed into a hands-on textbook, focusing on the principles of wireless sensor networks (WSNs), their applications, their protocols and standards, and their analysis and test tools; a meticulous care has been accorded to the definitions and terminology. To make WSNs felt and seen, the adopted technologies as well as their manufacturers are presented in detail. In introductory computer networking books, chapters sequencing follows the bottom up or top down architecture of the seven layers protocol. This book starts some steps later, with chapters ordered based on a topic's significance to the elaboration of wireless sensor networks (WSNs) concepts and issues. With such a depth, this book is intended for a wide audience, it is meant to be a helper and motivator, for both the senior undergraduates, postgraduates, researchers, and practitioners; concepts and WSNs related applications are laid out, research and practical issues are backed by appropriate literature, and new trends are put under focus. For senior undergraduate students, it familiarizes readers with conceptual foundations, applications, and practical project implementations. For graduate students and researchers, transport layer protocols and cross-layering protocols are presented and testbeds and simulators provide a must follow emphasis on the analysis methods and tools for WSNs. For practitioners, besides applications and deployment, the manufacturers and components of WSNs at several platforms and testbeds are fully explored.*

Asset Condition, Information Systems and Decision Models

Springer Science & Business Media *Asset Condition, Information Systems and Decision Models, is the second volume of the Engineering Asset Management Review Series. The manuscripts provide examples of implementations of asset information systems as well as some practical applications of condition data for diagnostics and prognostics. The increasing trend is towards prognostics rather than diagnostics, hence the need for assessment and decision models that promote the conversion of condition data into prognostic information to improve life-cycle planning for engineered assets. The research papers included here serve to support the on-going development of Condition Monitoring standards. This volume comprises selected papers from the 1st, 2nd, and 3rd World Congresses on Engineering Asset Management, which were convened under the auspices of ISEAM in collaboration with a number of organisations, including CIEAM Australia, Asset Management Council Australia, BINDT UK, and Chinese Academy of Sciences, Beijing University of Chemical Technology, China. Asset Condition, Information Systems and Decision Models will be of particular interest to finance, maintenance, and operations*

personnel whose roles directly affect the capability value of engineering asset base, as well as asset managers in both industry and government.

Manual of Geospatial Science and Technology

CRC Press *Following in the tradition of its popular predecessor, the Manual of Geospatial Science and Technology, Second Edition continues to be the authoritative volume that covers all aspects of the field, both basic and applied, and includes a focus on initiating, planning, and managing GIS projects. This comprehensive resource, which contains contributio*

Managing Information Highways

The PRISM Book: Principles, Methods, and Case Studies for Designing Telecommunications Management Systems

Springer Science & Business Media *This monograph constitutes the final report of the EC-sponsored PRISM project, which was devoted to communications management for integrated broadband communications (IBC) within the RACE program. The book introduces and applies the distributed management framework (DMF) developed for the specification and design of multi-domain management systems for controlling, monitoring, and administrating IBC networks. The DMF framework is evaluated in detail and related to other international architectural and specification work aimed at creating advanced communication management systems. Also, a summary of existing platforms potentially supporting PRISM's DMF system, a glossary, a list of acronyms and abreviations, and a detailed subject index are included.*

Knowledge Management

Crisis Management in the European Union

Cooperation in the Face of Emergencies

Springer Science & Business Media *In less than a decade, Europe has witnessed a series of large-scale natural disasters and two major terrorist attacks. Growing concern about the trans-national effects of these incidents has caused the EU Member States to seek more multilateral cooperation. As a result, a system of common arrangements for handling large-scale emergencies or disasters has emerged, which, due to its quick and ad-hoc development, may seem almost impenetrable to newcomers to the field. This book seeks to provide a much-needed overview of disaster and crisis management systems in the EU. It provides a basic understanding of how EU policy has evolved, the EU's mandate, and above all, a concise and hands-on description of the most central crisis management arrangements. Written by some of Europe's main experts and consultants in the field, this book represents a unique and comprehensive source of information for everyone involved or interested in the European Union crisis management system. "This book will quickly become an indispensable resource for two groups: Practitioners will enjoy its accessible and comprehensive style. Academics curious about this emerging field will turn to it for an introductory overview. As someone who closely studies this field, I find the book engaging, detailed, and accurate, and I read every line with great interest. The authors are to be commended for the quality of research that went into this work." Mark Rhinard, Senior Research Fellow at the Swedish Institute of International Affairs (UI)*

Infrastructure Health in Civil Engineering

Applications and Management

CRC Press *Continually increasing demands on infrastructures mean that maintenance and renewal require timely, appropriate action that maximizes benefits while minimizing cost. To be as well informed as possible, decision-makers must have an optimal understanding of an infrastructure's condition—what it is now, and what it is expected to be in the future. Written by two highly respected engineers, the second volume, Infrastructure Health in Civil Engineering: Applications and Management, integrates the decision making concept into theoretical and practical issues. It covers: State-of-the-art practice and future directions Use of probability and statistics in areas including structural modeling Specific practical applications, including retrofitting and rehabilitation in response to earthquake damage, corrosion, fatigue, and bridge security Use of IHCE for management and maintenance of different types of structures using pre-stressed and reinforced concrete, and fiber-reinforced polymers (FRPs) Numerous practical case studies, as well as coverage of*

the latest techniques in the use of sensors for damage detection and load testing Built to correspond to the ideas presented in its companion volume, Theory and Components, this is an invaluable guide to optimized, cost-saving methods that will help readers meet safety specifications for new projects, as well as the aging infrastructure at great risk of failure.

Global Urbanization

University of Pennsylvania Press *For the first time in history, the majority of the world's population lives in urban areas. Much of this urbanization has been fueled by the rapidly growing cities of the developing world, exemplified most dramatically by booming megacities such as Lagos, Karachi, and Mumbai. In the coming years, as both the number and scale of cities continue to increase, the most important matters of social policy and economic development will necessarily be urban issues. Urbanization, across the world but especially in Asia and Africa, is perhaps the critical issue of the twenty-first century. Global Urbanization surveys essential dimensions of this growth and begins to formulate a global urban agenda for the next half century. Drawing from many disciplines, the contributors tackle issues ranging from how cities can keep up with fast-growing housing needs to the possibilities for public-private partnerships in urban governance. Several essays address the role that cutting-edge technologies such as GIS software, remote sensing, and predictive growth models can play in tracking and forecasting urban growth. Reflecting the central importance of the Global South to twenty-first-century urbanism, the volume includes case studies and examples from China, India, Uganda, Kenya, and Brazil. While the challenges posed by large-scale urbanization are immense, the future of human development requires that we find ways to promote socially inclusive growth, environmental sustainability, and resilient infrastructure. The timely and relevant scholarship assembled in Global Urbanization will be of great interest to scholars and policymakers in demography, geography, urban studies, and international development.*

Proceedings of Seventh International Congress on Information and Communication Technology
ICICT 2022, London, Volume 1

Springer Nature *This book gathers selected high-quality research papers presented at the Seventh International Congress on Information and Communication Technology, held at Brunel University, London, on February 21–24, 2022. It discusses*

emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT) and e-mining. Written by respected experts and researchers working on ICT, the book offers a valuable asset for young researchers involved in advanced studies. The work is presented in four volumes.

The Green Book

Appraisal and Evaluation in Central Government : Treasury Guidance

Stationery Office *This new edition incorporates revised guidance from H.M Treasury which is designed to promote efficient policy development and resource allocation across government through the use of a thorough, long-term and analytically robust approach to the appraisal and evaluation of public service projects before significant funds are committed. It is the first edition to have been aided by a consultation process in order to ensure the guidance is clearer and more closely tailored to suit the needs of users.*

Managing Information Assurance in Financial Services

IGI Global *"This book provides high-quality research papers and industrial practice articles about information security in the financial service industry. It provides insight into current information security measures, including: technology, processes, and compliance from some of the leading researchers and practitioners in the field"-- Provided by publisher.*

Think global certify local

global comparability and regional adaptation for community certification systems

BoD – Books on Demand *global comparability and regional adaptation for community certification systems ----- exemplified by the water infrastructural components in the community*

11th International Conference on Cyber Warfare and Security ICCWS2016

Academic Conferences and publishing limited *The 11thInternational Conference on Cyber Warfare and Security (ICCWS 2016) is being held at Boston University, Boston, USA on the 17-18th March 2016. The Conference Chair is Dr Tanya Zlateva and the Programme Chair is Professor Virginia Greiman, both from Boston University. ICCWS is a recognised Cyber Security event on the International research conferences calendar and provides a valuable platform for individuals to present their research findings, display their work in progress and discuss conceptual and empirical advances in the area of Cyber Warfare and Cyber Security. It provides an important opportunity for researchers and managers to come together with peers to share their experiences of using the varied and expanding range of Cyberwar and Cyber Security research available to them. The keynote speakers for the conference are Daryl Haegley from the Department of Defense (DoD), who will address the topic Control Systems Networks...What's in Your Building? and Neal Ziring from the National Security Agency who will be providing some insight to the issue of Is Security Achievable? A Practical Perspective. ICCWS received 125 abstract submissions this year. After the double blind, peer review process there are 43 Academic Research Papers 8 PhD papers Research papers, 7 Masters and 1 work-in-progress papers published in these Conference Proceedings. These papers represent work from around the world, including: Australia, Canada, China, Czech Republic, District of Columbia, Finland, France, Israel, Japan, Lebanon, Netherlands, Pakistan, Russian Federation, Saudi Arabia, South Africa, Turkey, United Arab Emirates, UK, USA.*

Proceedings of the 6th International Conference on Hydroinformatics Singapore, 21-24 June 2004

World Scientific *Hydroinformatics addresses cross-disciplinary issues ranging from technological and sociological to more general environmental concerns, including an ethical perspective. It covers the application of information technology in the widest sense to problems of the aquatic environment.This two-volume publication contains about 250 high quality papers contributed by authors from over 50 countries. The proceedings present many exciting new findings in the emerging subjects, as well as their applications, such as: data mining, data assimilation, artificial neural networks, fuzzy logic, genetic algorithms and genetic programming, chaos theory and support*

vector machines, geographic information systems and virtual imaging, decision support and management systems, Internet-based technologies.This book provides an excellent reference to researchers, graduate students, practitioners, and all those interested in the field of hydroinformatics.

Hydroinformatics, Proceedings Of The 6th International Conference (In 2 Volumes, With Cd-rom)

World Scientific *Hydroinformatics addresses cross-disciplinary issues ranging from technological and sociological to more general environmental concerns, including an ethical perspective. It covers the application of information technology in the widest sense to problems of the aquatic environment.This two-volume publication contains about 250 high quality papers contributed by authors from over 50 countries. The proceedings present many exciting new findings in the emerging subjects, as well as their applications, such as: data mining, data assimilation, artificial neural networks, fuzzy logic, genetic algorithms and genetic programming, chaos theory and support vector machines, geographic information systems and virtual imaging, decision support and management systems, Internet-based technologies.This book provides an excellent reference to researchers, graduate students, practitioners, and all those interested in the field of hydroinformatics.*

Army

Managing Building Deterioration Prediction Model for Public Schools in Developing Countries

Springer Nature

Multimodal User Interfaces From Signals to Interaction

Springer Science & Business Media *tionship indicates how multimodal medical image processing can be unified to a large extent, e. g. multi-channel segmentation and image registration, and extend information theoretic registration to other features than image intensities. The framework is not at all restricted to medical images though and this is illustrated by applying it to multimedia sequences as well.*

In Chapter 4, the main results from the developments in plastic UIs and mul- modal UIs are brought together using a theoretic and conceptual perspective as a unifying approach. It is aimed at defining models useful to support UI plasticity by relying on multimodality, at introducing and discussing basic principles that can drive the development of such UIs, and at describing some techniques as proof-of-concept of the aforementioned models and principles. In Chapter 4, the authors introduce running examples that serve as illustration throughout the d- cussion of the use of multimodality to support plasticity.

Nuclear Energy Infrastructure Database Description and User's Manual

In 2014, the Deputy Assistant Secretary for Science and Technology Innovation initiated the Nuclear Energy (NE)-Infrastructure Management Project by tasking the Nuclear Science User Facilities, formerly the Advanced Test Reactor National Scientific User Facility, to create a searchable and interactive database of all pertinent NE-supported and -related infrastructure. This database, known as the Nuclear Energy Infrastructure Database (NEID), is used for analyses to establish needs, redundancies, efficiencies, distributions, etc., to best understand the utility of NE's infrastructure and inform the content of infrastructure calls. The Nuclear Science User Facilities developed the database by utilizing data and policy direction from a variety of reports from the U.S. Department of Energy, the National Research Council, the International Atomic Energy Agency, and various other federal and civilian resources. The NEID currently contains data on 802 research and development instruments housed in 377 facilities at 84 institutions in the United States and abroad. The effort to maintain and expand the database is ongoing. Detailed information on many facilities must be gathered from associated institutions and added to complete the database. The data must be validated and kept current to capture facility and instrumentation status as well as to cover new acquisitions and retirements. This document provides a short tutorial on the navigation of the NEID web portal at NSUF-Infrastructure. INL.gov.

Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures

CRC Press Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures contains the plenary lectures and papers presented at the 11th International Conference on STRUCTURAL SAFETY AND RELIABILITY (ICOSSAR2013, New York, NY, USA, 16-20 June 2013), and covers major aspects of safety, reliability,

risk and life-cycle performance of str

Wireless Sensor Networks

Concepts, Applications, Experimentation and Analysis

Springer *This book focuses on the principles of wireless sensor networks (WSNs), their applications, and their analysis tools, with meticulous attention paid to definitions and terminology. This book presents the adopted technologies and their manufacturers in detail, making WSNs tangible for the reader. In introductory computer networking books, chapter sequencing follows the bottom-up or top-down architecture of the 7-layer protocol. This book addresses subsequent steps in this process, both horizontally and vertically, thus fostering a clearer and deeper understanding through chapters that elaborate on WSN concepts and issues. With such depth, this book is intended for a wide audience; it is meant to be a helper and motivator for senior undergraduates, postgraduates, researchers, and practitioners. It lays out important concepts and WSN-relate applications; uses appropriate literature to back research and practical issues; and focuses on new trends. Senior undergraduate students can use it to familiarize themselves with conceptual foundations and practical project implementations. For graduate students and researchers, test beds and simulators provide vital insights into analysis methods and tools for WSNs. Lastly, in addition to applications and deployment, practitioners will be able to learn more about WSN manufacturers and components within several platforms and test beds.*

DS8000 Global Mirror Best Practices

IBM Redbooks *This IBM® RedpaperTM publication reviews the architecture and operations of the IBM DS8000® Global Mirror function. The document looks at different aspects of the solution in terms of performance, infrastructure requirements, data integrity, business continuity, and impact on production. Hints and tips are provided on how to best configure the overall Global Mirror environment, in terms of connectivity, storage configuration, and specific parameters tuning. The guidelines that are provided are in general related to performance, which ultimately ensures a better recovery point objective (RPO). Therefore, we encourage you to follow those guidelines.*

Australian Infrastructure Financial

Management Guidelines

"... Provide[s] asset management and financial management professionals with the tools to implement sustainable management and financial reporting of infrastructure"--P. v.

eWork and eBusiness in Architecture, Engineering and Construction: ECPPM 2016

Proceedings of the 11th European Conference on Product and Process Modelling (ECPPM 2016), Limassol, Cyprus, 7-9 September 2016

CRC Press *eWork and eBusiness in Architecture, Engineering and Construction 2016 collects the papers presented at the 11th European Conference on Product & Process Modelling (ECPPM 2016, Cyprus, 7-9 September 2016), The contributions cover complementary thematic areas that hold great promise for the advancement of research and technological development in the modelling of complex engineering systems, encompassing a substantial number of high quality contributions on a large spectrum of topics pertaining to ICT deployment instances in AEC/FM, including: • Information and Knowledge Management • Construction Management • Description Logics and Ontology Application in AEC • Risk Management • 5D/nD Modelling, Simulation and Augmented Reality • Infrastructure Condition Assessment • Standardization of Data Structures • Regulatory and Legal Aspects • Multi-Model and distributed Data Management • System Identification • Industrialized Production, Smart Products and Services • Interoperability • Smart Cities • Sustainable Buildings and Urban Environments • Collaboration and Teamwork • BIM Implementation and Deployment • Building Performance Simulation • Intelligent Catalogues and Services*

User-Centred and Context-Aware Identity Management in Mobile Ad-

Hoc Networks

Cambridge Scholars Publishing *The emergent notion of ubiquitous computing makes it possible for mobile devices to communicate and provide services via networks connected in an ad-hoc manner. These have resulted in the proliferation of wireless technologies such as Mobile Ad-hoc Networks (MANets), which offer attractive solutions for services that need flexible setup as well as dynamic and low cost wireless connectivity. However, the growing trend outlined above also raises serious concerns over Identity Management (IM) due to a dramatic increase in identity theft. The problem is even greater in service-oriented architectures, where partial identities are sprinkled across many services and users have no control over such identities. This book provides a review of some issues of contextual computing, its implications and usage within pervasive environments. The book will also introduce the concept of Security of Systems-of-Systems (SoS) Composition and its security implications within the domain of ubiquitous computing and Crisis Management in large scale disaster recovery situations and scenarios. To tackle the above problems, the book will emphasise the fact that it is essential to allow users to have full control over their own identities in MANet environments. So far, the development of such identity control remains a significant challenge for the research community. The main focus of this book is on the area of identity management in MANets and emergency situations by using context-awareness and user-centricity together with its security issues and implications. Context-awareness allows us to make use of partial identities as a way of user identity protection and node identification. User-centricity is aimed at putting users in control of their partial identities, policies and rules for privacy protection. These principles help us to propose an innovative, easy-to-use identity management framework for MANets. The framework makes the flow of partial identities explicit; gives users control over such identities based on their respective situations and contexts, and creates a balance between convenience and privacy. The book presents our proposed framework, its development and lab results/evaluations, and outlines possible future work to improve the framework. This book will be of great interest and benefit to undergraduate students undertaking computer science modules on security and ubiquitous computing and postgraduate students studying the security of large scale systems of systems composition, as well as those doing their projects in those areas. The book will also accommodate the needs of early researchers and DPhil/PhD or MPhil students exploring the concept of security in ubiquitous environments, while additionally being of great interest to lecturers teaching related modules and industrial researchers.*

Safety and Security Issues in

Technical Infrastructures

IGI Global *In the modern age of urbanization, the mass population is becoming progressively reliant on technical infrastructures. These industrial buildings provide integral services to the general public including the delivery of energy, information and communication technologies, and maintenance of transport networks. The safety and security of these structures is crucial as new threats are continually emerging. Safety and Security Issues in Technical Infrastructures is a pivotal reference source that provides vital research on the modernization of occupational security and safety practices within information technology-driven buildings. While highlighting topics such as explosion process safety, nanotechnology, and infrastructural risk analysis, this publication explores current risks and uncertainties and the raising of comprehensive awareness for experts in this field. This book is ideally designed for security managers, safety personnel, civil engineers, architects, researchers, construction professionals, strategists, educators, material scientists, property owners, and students.*

Methodology for Hybrid Role Development

BoD – Books on Demand

Construction Operations Manual of Policies and Procedures, Fifth Edition

McGraw-Hill Education *The latest tools and techniques for successfully managing construction operations CONSTRUCTION Fully revised throughout, the new edition of this practical guide offers a wealth of proven strategies for effectively running a construction business, delivering high-quality projects on time and within budget, and maximizing profits--all gleaned from the authors' decadeslong experience in the construction industry. Construction Operations Manual of Policies and Procedures, Fifth Edition contains new chapters on Building Information Modeling (BIM) and claims, disputes, arbitration, and mediation. More than 150 new and updated contract formats, checklists, forms, and sample letters are included. The book also provides current OSHA safety regulations and standards and the latest LEED Certification requirements. Run a profitable and efficient construction firm with help from this time-saving resource. COVERAGE INCLUDES: Company organization and quality assurance program Company and project administration General contracts Project engineering Site superintendence Safety and loss control Design-build project administration The preparation and processing of change orders Claims, disputes,*

arbitration, and mediation Progress schedules and funds analysis Building Information Modeling Green buildings and sustainability

Critical Infrastructure Protection II

Springer *Critical Infrastructure Protection II describes original research results and innovative applications in the interdisciplinary field of critical infrastructure protection. Also, it highlights the importance of weaving science, technology and policy in crafting sophisticated solutions that will help secure information, computer and network assets in the various critical infrastructure sectors. This book is the second volume in the annual series produced by the International Federation for Information Processing (IFIP) Working Group 11.10 on Critical Infrastructure Protection, an international community of scientists, engineers, practitioners and policy makers dedicated to advancing research, development and implementation efforts focused on infrastructure protection. The book contains a selection of twenty edited papers from the Second Annual IFIP WG 11.10 International Conference on Critical Infrastructure Protection held at George Mason University, Arlington, Virginia, USA in the spring of 2008.*

International Labour Documentation

Handbook of Water and Wastewater Systems Protection

Springer Science & Business Media *Following the events of 9/11, the Administrator of the US Environmental Protection Agency created the Water Protection Task Force (WPTF), which identified water and wastewater systems as a major area of vulnerability to deliberate attack. The WPTF suggested that there are steps that can be taken to reduce these vulnerabilities and to make it as difficult as possible for potential saboteurs to succeed. The WPTF recommended that be scrutinized with renewed vigor to secure water and wastewater systems against these possible threats. It also recommended that water and wastewater systems have a response plan in place in the event an act of terrorism occurs. The WPTF identified water distribution networks as an area of special vulnerability and highlighted the need for rapid on-line detection methods that are accurate and have a wide detection range. As a result of these recommendations novel technologies from various fields of science and engineering are now addressing water security issues and water and wastewater utilities are looking for innovative solutions. Once such technologies are available, there will be a rapid implementation process that will present many business opportunities for the private sector. However, in addition to terrorist threats water and wastewater systems are inherently vulnerable to natural disasters such as earthquakes and floods. This volume will address the*

problems associated with both intended terrorist attacks and natural disasters affecting water or wastewater systems. The book is divided into parts based on the kinds of threats facing water and wastewater systems: (1) a direct attack on water and wastewater infrastructure storage reservoirs, and distribution and collection networks; (2) a cyber attack disabling the functionality of the water and wastewater systems or taking over control of key components which might result in system failures; and (3) a deliberate chemical or biological contaminant injection at one of the water distribution system's nodes. It will examine unique plans, technological and managerial innovations for protecting such systems, and includes descriptions of projects that were implemented to respond to natural disasters. Case studies are presented that discuss existing projects and evaluate their performance, with an emphasis on providing guidelines and techniques that can be implemented by water and wastewater planners and managers to deal with natural and manmade disasters should they occur.

A Comprehensive Guide to 5G Security

John Wiley & Sons *The first comprehensive guide to the design and implementation of security in 5G wireless networks and devices Security models for 3G and 4G networks based on Universal SIM cards worked very well. But they are not fully applicable to the unique security requirements of 5G networks. 5G will face additional challenges due to increased user privacy concerns, new trust and service models and requirements to support IoT and mission-critical applications. While multiple books already exist on 5G, this is the first to focus exclusively on security for the emerging 5G ecosystem. 5G networks are not only expected to be faster, but provide a backbone for many new services, such as IoT and the Industrial Internet. Those services will provide connectivity for everything from autonomous cars and UAVs to remote health monitoring through body-attached sensors, smart logistics through item tracking to remote diagnostics and preventive maintenance of equipment. Most services will be integrated with Cloud computing and novel concepts, such as mobile edge computing, which will require smooth and transparent communications between user devices, data centers and operator networks. Featuring contributions from an international team of experts at the forefront of 5G system design and security, this book: Provides priceless insights into the current and future threats to mobile networks and mechanisms to protect it Covers critical lifecycle functions and stages of 5G security and how to build an effective security architecture for 5G based mobile networks Addresses mobile network security based on network-centricity, device-centricity, information-centricity and people-centricity views Explores security considerations for all relative stakeholders of mobile networks, including mobile network operators, mobile network virtual operators, mobile users, wireless users, Internet-of things, and cybersecurity experts Providing a comprehensive guide to state-of-the-art in 5G security theory and practice, A Comprehensive Guide to 5G Security is an important working resource for researchers, engineers and business professionals working on*

5G development and deployment.

Hydroinformatics Tools for Planning, Design, Operation and Rehabilitation of Sewer Systems

Springer Science & Business Media *Hydroinformatics systems are systems that combine computational hydraulic modelling with information systems (including knowledge-based systems). They are gaining rapid acceptance in the areas of environmental planning, design and management. The present book focuses exclusively on sewage systems, starting with their planning and then going on to discuss their design, operation and rehabilitation. The very experienced authors discuss business and information needs in the management of urban drainage, tools for collecting and archiving such data, and their use in modelling catchment hydrology, sewer systems hydraulics, wastewater quality, wastewater treatment plant operation, and receiving waters. The control and operation of sewer systems in real time is described, followed by a discussion of their maintenance and rehabilitation. Intelligent decision support systems for managing the urban drainage business process are presented. Audience: Researchers into sewer design, municipal engineers, planners and managers interested in an innovative approach to all aspects of the planning, design and operation of sewer systems.*

Risk Management in Civil Infrastructure

CRC Press *This book presents several original theories for risk, including Theory of Risk Monitoring, and Theory of Risk Acceptance, in addition to several analytical models for computing relative and absolute risk. The book discusses risk limit, states of risk, and the emerging concept of risk monitoring. The interrelationships between risk and resilience are also highlighted in an objective manner. The book includes several practical case studies showing how risk management and its components can be used to enhance performance of infrastructures at reasonable costs.*