

Spare Parts Inventory Management A Complete Guide To Sparesology

This well-received text, designed for the students of MBA, BTech (Mechanical Engineering and Industrial and Production Engineering) and MTech (Industrial Engineering and Management), has been revised and reorganized in its second edition. The book, divided into six sections, deals with the concepts of core maintenance and related auxiliary functions, core spares issues, related auxiliary spares functions, caselets and policy cases. This research-based study attempts to impart a comprehensive knowledge of maintenance and spare parts management, particularly in the Indian context. Illustrations, tables, caselets, cases and presentation of several topics in A-Z points add pedagogic value to the text.

This introductory textbook describes the basics of supply chain management, manufacturing planning and control systems, purchasing, and physical distribution. The fourth edition makes additions in kanban, supply chain concepts, system selection, theory of constraints and drum-buffer-rope, and need f

The Second International Conference on Fuzzy Information and Engineering (ICFIE2007) is a major symposium for scientists, engineers and practitioners in China as well as the world to present their latest results, ideas, developments and applications in all areas of fuzzy information and knowledge engineering. It aims to strengthen relations between industry research laboratories and universities, and to create a primary symposium for world scientists.

This book focuses on the tactical planning level for spare parts management. It describes a series of multi-item inventory models and presents exact and heuristic

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optimization methods, including greedy heuristics that work well for real, life-sized problems. The intended audience consists of graduate students, starting scholars in the field of spare parts inventory control, and spare parts planning specialists in the industry. In individual chapters the authors consider topics including: a basic single-location model; single-location models with multiple machine types and/or machine groups; the multi-location model with lateral transshipments; the classical METRIC model and its generalization to multi-indenture systems; and a single-location model with an explicit modeling of the repair capacity for failed parts and the priorities that one can set there. Various chapters of the book are used in a master course at Eindhoven University of Technology and in a PhD course of the Graduate Program Operations Management and Logistics (a Dutch network that organizes PhD courses in the field of OM&L). The required pre-knowledge consists of probability theory and basic knowledge of Markov processes and queuing theory. End-of-chapter problems appear for all chapters, with some answers appearing in an appendix. The maintenance storeroom is a key department in a facility. It is a profit center and supports Preventive Maintenance (PM) and Predictive Maintenance (PdM) efforts. It supplies parts for emergencies and unexpected breakdowns. It contributes to improving reliability for maintenance by the purchase and storage of quality parts. Equipment Bills of Materials are kept up to date and maintained, so that the right parts, right quantities, with the right specifications are able to be determined by the buyer, and by the maintenance crew. The storeroom is an integral piece of the maintenance strategy. This book discusses the five strong pillars needed to develop a program of MRO (Maintenance parts, repair parts, and operating supplies) and the maintenance storeroom. These pillars together create a solid base to move forward

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and become a reliability excellent storeroom that is responsive to the needs of maintenance, the plant, and the enterprise.

The managed flow of goods and information from raw material to final sale also known as a "supply chain" affects everything--from the U.S. gross domestic product to where you can buy your jeans. The nature of a company's supply chain has a significant effect on its success or failure--as in the success of Dell Computer's make-to-order system and the failure of General Motor's vertical integration during the 1998 United Auto Workers strike. Supply Chain Integration looks at this crucial component of business at a time when product design, manufacture, and delivery are changing radically and globally. This book explores the benefits of continuously improving the relationship between the firm, its suppliers, and its customers to ensure the highest added value. This book identifies the state-of-the-art developments that contribute to the success of vertical tiers of suppliers and relates these developments to the capabilities that small and medium-sized manufacturers must have to be viable participants in this system. Strategies for attaining these capabilities through manufacturing extension centers and other technical assistance providers at the national, state, and local level are suggested. This book identifies action steps for small and medium-sized manufacturers--the "seed corn" of business start-up and development--to improve supply chain management. The book examines supply chain models from consultant firms, universities, manufacturers, and associations. Topics include the roles of suppliers and other supply chain participants, the rise of outsourcing, the importance of information management, the natural tension between buyer and seller, sources of assistance to small and medium-sized firms, and a host of other issues. Supply Chain Integration will be of interest to industry policymakers,

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economists, researchers, business leaders, and forward-thinking executives.

With the pressure of time-based competition increasing, and customers demanding faster service, availability of service parts becomes a critical component of manufacturing and servicing operations. Service Parts Management first focuses on intermittent demand forecasting and then on the management of service parts inventories. It guides researchers and practitioners in finding better management solutions to their problems and is both an excellent reference for key concepts and a leading resource for further research. Demand forecasting techniques are presented for parametric and nonparametric approaches, and multi echelon cases and inventory pooling are also considered. Inventory control is examined in the continuous and periodic review cases, while the following are all examined in the context of forecasting: • error measures, • distributional assumptions, and • decision trees. Service Parts Management provides the reader with an overview and a detailed treatment of the current state of the research available on the forecasting and inventory management of items with intermittent demand. It is a comprehensive review of service parts management and provides a starting point for researchers, postgraduate students, and anyone interested in forecasting or managing inventory.

Closed-Loop Supply Chains (CLSC) offer companies a unique opportunity to improve their profits whilst serving societal responsibility. The management of CLSC differs in a number of ways from managing supply chains in general. The book examines these differences and how these differences may be dealt with in practice, by offering a concrete framework, introducing the different aspects related to CLSC and their mutual relations, in a

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systematic logical way as well as cases clustered according to the inputs for a CLSC. The framework and especially the cases from successful companies offer the reader an invaluable help to build and improve CLSC.

"This book explains and summarizes the processes (course of actions and the number of stages or steps to follow) and the reference frame (the essential support structure and the basic system) necessary for the implementation of the introduced maintenance management model (MMM) and will help managers, technology developers, scientists and engineers to adopt and implement optimum decision making based on techniques of maintenance and reliability in organizations"--

As leading authorities worldwide on setting part stocking levels for safety stocks to support the production process, the authors have shown that between 25 and 50 percent of the inventory investment is not necessary. Thus the overall objective of this book is to instruct readers in how to optimize their company's spare parts asset. This compilation of the best techniques and practices for optimizing MRO inventory offers numerous case studies showing the best and not so good ways to improve plant inventory performance. Based on practical solutions to everyday inventory problems, it uses simple, but useful metrics for setting and monitoring goals. Covers stocking theory and practice. Uses the Pareto Principal throughout as the best way to achieve superior results with a minimum of investment of time by plant personnel. Includes the following topics: the risks inherent in setting inventory stocking levels, setting the

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reorder point, setting the reorder quantity, determining excess inventory, how to avoid unnecessary purchases of spares, and how to set and monitor goals for inventory improvement.

Engineers and reliability professionals are increasingly being held accountable for materials and spare parts inventory management and in response they need to gain a better understanding of materials and spare parts inventory management principles and practices. This practical book delivers just that. This new edition will help you get the right parts, in the right place, at the right time, for the right reason. Fully revised, it provides specific coverage of the issues faced in, and requirements for, managing engineering materials and spare parts and what to do to improve your results. It includes 29 exclusive examples and real life case studies to demonstrate the application of the concepts and ideas so that you will easy and quickly understand how to implement them. What's more it will show you: What to do to truly optimize your inventory holdings, Why inventory levels are almost always too high, How to identifying the factors that have greatest impact on your inventory levels, When to apply the 7 Actions for Inventory Reduction, Where to focus your efforts for greatest effect, and Who to involve in taking action. The concepts, ideas, tools, and processes in this book have helped many companies achieve and sustain results that other inventory tools and approaches just could not match. And it is sure to help you achieve true inventory optimization as well! The second edition includes? A new chapter on The Mechanics of Inventory Management, a

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pragmatic review of the management of inventory including? Introducing the Materials and Inventory Management Cycle, Comparing theoretical and actual inventory outcomes, Discussion on normal and Poisson distribution models, How to determine the re order point, How to determine the re order quantity, and Commentary on Monte Carlo simulation. An expanded chapter on the financial impact of inventory, including a discussion of the key reports that need to be understood. Chapters on the influence of policies, procedures, and people. Additional discussion on issues faced and how to address them. An expansion of the central process discussed in the first edition to a more comprehensive review process? Inventory Process™ Optimization. An expanded section on executing an inventory review program. A closing 'where to from here' chapter. 57 figures and diagrams - 30 of them new and the others all revised and updated and six new tables (with 8 in total). Eight new checklists - specifically included as a new tool for the reader and is the result of direct reader requests. An expanded glossary.

Researchers from the entire world write to figure out their newest results and to contribute new ideas or ways in the field of system reliability and maintenance. Their articles are grouped into four sections: reliability, reliability of electronic devices, power system reliability and feasibility and maintenance. The book is a valuable tool for professors, students and professionals, with its presentation of issues that may be taken as examples applicable to practical situations. Some examples defining the contents can be highlighted: system

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reliability analysis based on goal-oriented methodology; reliability design of water-dispensing systems; reliability evaluation of drivetrains for off-highway machines; extending the useful life of asset; network reliability for faster feasibility decision; analysis of standard reliability parameters of technical systems' parts; cannibalisation for improving system reliability; mathematical study on the multiple temperature operational life testing procedure, for electronic industry; reliability prediction of smart maximum power point converter in photovoltaic applications; reliability of die interconnections used in plastic discrete power packages; the effects of mechanical and electrical straining on performances of conventional thick-film resistors; software and hardware development in the electric power system; electric interruptions and loss of supply in power systems; feasibility of autonomous hybrid AC/DC microgrid system; predictive modelling of emergency services in electric power distribution systems; web-based decision-support system in the electric power distribution system; preventive maintenance of a repairable equipment operating in severe environment; and others.

This utterly comprehensive work is thought to be the first to integrate the literature on the physics of the failure of complex systems such as hospitals, banks and transport networks. It has chapters on particular aspects of maintenance written by internationally-renowned researchers and practitioners. This book will interest maintenance engineers and managers in industry as well as researchers and graduate students in maintenance, industrial engineering and applied mathematics.

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Inventory control is vitally important to almost any type of industry, whether product or service-oriented.

Investments in raw materials, spare parts, work-in-progress and finished products are all critical costs of operations which if not controlled can lead to high capital costs, high operating costs, and decreased production efficiency. This book focuses on the problems of materials control in small-scale manufacturing industries. It explains how to optimize the available resources with a view to reducing material costs and achieving improved capital turnover. It also analyzes a few selected industries and critically reviews their performance in the area of inventory control. The book is designed as a text on inventory management for postgraduate students pursuing courses in commerce, management, and business studies. It is also suitable for all those studying for professional qualifications such as CA, ICWA, and CS.

The discipline of technology management focuses on the scientific, engineering, and management issues related to the commercial introduction of new technologies.

Although more than thirty U.S. universities offer PhD programs in the subject, there has never been a single comprehensive resource dedicated to technology management. "The Handbook of Technology Management" fills that gap with coverage of all the core topics and applications in the field. Edited by the renowned Doctor Hossein Bidgoli, the three volumes here include all the basics for students, educators, and practitioners

This book includes a selection of refereed papers

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presented at the "Annual International Conference of the German Operations Research Society (OR2016)," which took place at the Helmut-Schmidt-Universität / Universität der Bundeswehr Hamburg, Germany, Aug. 30 - Sept. 2, 2016. Over 700 practitioners and academics from mathematics, computer science, business/economics, and related fields attended the conference. The scientific program included around 475 presentations on the theme Analytical Decision Making, focusing on the process of researching complex decision problems and devising effective solution methods towards better decisions. The book presents papers discussing classical mathematical optimization, statistics and simulation techniques. Such approaches are complemented by computer science methods and tools for the processing of data and the design and implementation of information systems. The book also examines recent advances in information technology, which allow big data volumes to be treated and enable real-time predictive and prescriptive business analytics to drive decisions and actions. Further, it includes problems modeled and treated under consideration of uncertainty, risk management, behavioral issues, and strategic decision situations.

The book *Inventory Management Principles and Practices* explains all the fundamental principles of Inventory Management. It starts with a definition of Inventory, why it is needed as well as not needed, what is its impact on a business, how do we classify them for ease of control and what are the various techniques of inventory control. Inventory is an outcome of

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procurement. So obviously, while studying inventories, the logic behind its procurement should be studied. Hence, chapters on Manufacturing Resources Planning have been added. Just-in-time principles and TQM are some more methods of achieving world-class manufacturing, so they have also been included here. In the present scenario, all activities are being computerized. So lessons on e-commerce as well as all the latest technologies that are affecting Inventory Management have been included. Chapters have been included on methods to handle specific classes of inventories such as spare parts inventory, finished goods inventory, work-in-process inventory, surplus, obsolete and non-moving inventory, etc. Logistics and supply chain management defines the path which a material takes in its life through a company. So it was essential to include a chapter on it also. Keeping in mind the syllabus prescribed in the various universities on this subject, the chapters have been designed accordingly. A chapter has also been included on some motivational thoughts outlining some principles, which would help us to become successful in life. The principles outlined here are universal, applicable to any situation, organization or country.

In the past 3 years, ICSRS was held in large capital cities, such as Paris, Milan, Barcelona Based on the previous success, 2019 4th International Conference on System Reliability and Safety (ICSRS 2019) will be held during November 20-22, 2019 at NH Roma Villa Carpegna in Rome, Italy ICSRS 2019 is Technical Co Sponsored by IEEE Reliability Society (Italy Chapter)

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ICSRS 2019 aims to provide a high level international forum to bring together industry professionals, academics, and individuals from institutions, industrials and government agencies to exchange information, share achievements, and discuss the advancement in the fields of System Reliability and Safety, etc

The two-volume set (LNCS 6728 and 6729) constitutes the refereed proceedings of the International Conference on Swarm Intelligence, ICSI 2011, held in Chongqing, China, in June 2011. The 143 revised full papers presented were carefully reviewed and selected from 298 submissions. The papers are organized in topical sections on theoretical analysis of swarm intelligence algorithms, particle swarm optimization, applications of pso algorithms, ant colony optimization algorithms, bee colony algorithms, novel swarm-based optimization algorithms, artificial immune system, differential evolution, neural networks, genetic algorithms, evolutionary computation, fuzzy methods, and hybrid algorithms - for part I. Topics addressed in part II are such as multi-objective optimization algorithms, multi-robot, swarm-robot, and multi-agent systems, data mining methods, machine learning methods, feature selection algorithms, pattern recognition methods, intelligent control, other optimization algorithms and applications, data fusion and swarm intelligence, as well as fish school search - foundations and applications. This book brings together some of the latest thinking by leading experts from around the world on integrating systems and strategies in production management and related issues that are relevant for making production

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into a competitive resource for the firm. This book is composed of five parts, each focused on a specific theme: Linking systems and strategies; Strategic operations management; IS/IT applications in the value chain; Modelling and simulation; Improving operations. Stock management and control is a critical element to the success and overall financial well-being of an organization. Through the application of innovative practices and technology, businesses are now able to effectively monitor their operations and manage their inventory by evaluating sales patterns and customer preferences. The Handbook of Research on Promoting Business Process Improvement Through Inventory Control Techniques is a critical scholarly resource that examines optimization techniques, data mining concepts, and genetic algorithms to manage inventory control. Featuring coverage on a broad range of topics such as logistics and supply chain management, stochastic inventory modelling, and inventory management in healthcare, this book is geared towards academicians, practitioners, and researchers seeking various research methods to get optimal ordering policy.

This SME classic is both a reference book for the working engineer and a textbook for the mining student. This hardcover edition gives a brief history of surface mining and a general overview of the state of surface mining today--topics range from production and productivity to technological developments and trends in equipment. This extremely useful text takes the approach that

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exploration and mining geologists must be expert in a number of fields, including basic finance and economics, logistics, and pragmatic prospecting. Readers will find material on all these topics and more. The book's nine chapters include: Introduction, Exploration and Geology Techniques, Ore Reserve Estimation, Feasibility Studies and Project Financing, Planning and Design of Surface Mines, Mine Operations, Mine Capital and Operating Costs, Management and Organization, and Case Studies. The book is fully indexed.

Introduction Vision, Mission and Strategy
Maintenance Basics Planning and Scheduling Parts, Materials and Tools Management Reliability
Operational Reliability M&R Tools Performance Measure - Metrics Human Side of M&R Best Practices/Benchmarking Maintenance Excellence
Appendices

To be able to compete successfully both at national and international levels, production systems and equipment must perform at levels not even thinkable a decade ago. Requirements for increased product quality, reduced throughput time and enhanced operating effectiveness within a rapidly changing customer demand environment continue to demand a high maintenance performance. In some cases, maintenance is required to increase operational effectiveness and revenues and customer satisfaction while reducing capital, operating and

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support costs. This may be the largest challenge facing production enterprises these days. For this, maintenance strategy is required to be aligned with the production logistics and also to keep updated with the current best practices. Maintenance has become a multidisciplinary activity and one may come across situations in which maintenance is the responsibility of people whose training is not engineering. This handbook aims to assist at different levels of understanding whether the manager is an engineer, a production manager, an experienced maintenance practitioner or a beginner. Topics selected to be included in this handbook cover a wide range of issues in the area of maintenance management and engineering to cater for all those interested in maintenance whether practitioners or researchers. This handbook is divided into 6 parts and contains 26 chapters covering a wide range of topics related to maintenance management and engineering.

Defense Inventory: Management Actions Needed to Improve the Cost Efficiency of the Navy's Spare Parts Inventory

Read and learn how to minimize inventory and maximize customer satisfaction, how different business environments affect inventory management, how to accurately determine necessary inventory levels, and how to set up a warehouse system for locating parts and products.

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Overview No previous works have focused on the topic of inventory reduction and optimization to the extent that this one does. Spare Parts Inventory Management: A Complete Guide to Sparesology(tm) by Philip Slater covers the whole part's life cycle, from initial purchase to final disposal, and addresses issues throughout, including maintenance, repair, and overhaul (MRO). The author, Phillip Slater, was described in a recent podcast as "truly one of the leaders in the MRO information segment."

Sparesology is a term coined by Slater to describe the discipline of optimizing the physical, financial, and human resource management processes of spare parts inventory management. Sparesology is much more than just inventory optimization. It involves an understanding of the complete "ecosystem," within which the spare parts inventory is managed, and seeks to ensure that all of the factors influencing this management work together to achieve an organization's goals.

The GCBME Book Series aims to promote the quality and methodical reach of the Global Conference on Business Management & Entrepreneurship, which is intended as a high-quality scientific contribution to the science of business management and entrepreneurship. The Contributions are expected to be the main reference articles on the topic of each book and have been subject to a strict peer review process conducted by

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experts in the fields. The conference provided opportunities for the delegates to exchange new ideas and implementation of experiences, to establish business or research connections and to find Global Partners for future collaboration. The conference and resulting volume in the book series is expected to be held and appear annually. The year 2019 theme of book and conference is "Transforming Sustainable Business In The Era Of Society 5.0". The ultimate goal of GCBME is to provide a medium forum for educators, researchers, scholars, managers, graduate students and professional business persons from the diverse cultural backgrounds, to present and discuss their research, knowledge and innovation within the fields of business, management and entrepreneurship. The GCBME conferences cover major thematic groups, yet opens to other relevant topics: Organizational Behavior, Innovation, Marketing Management, Financial Management and Accounting, Strategic Management, Entrepreneurship and Green Business. Inventories are prevalent everywhere in the commercial world, whether it be in retail stores, manufacturing facilities, government stockpile material, Federal Reserve banks, or even your own household. This textbook examines basic mathematical techniques used to sufficiently manage inventories by using various computational methods

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and mathematical models. The text is presented in a way such that each section can be read independently, and so the order in which the reader approaches the book can be inconsequential. It contains both deterministic and stochastic models along with algorithms that can be employed to find solutions to a variety of inventory control problems. With exercises at the end of each chapter and a clear, systematic exposition, this textbook will appeal to advanced undergraduate and first-year graduate students in operations research, industrial engineering, and quantitative MBA programs. It also serves as a reference for professionals in both industry and government worlds. The prerequisite courses include introductory optimization methods, probability theory (non-measure theoretic), and stochastic processes.

This book provides a straightforward overview for every researcher interested in stochastic dynamic vehicle routing problems (SDVRPs). The book is written for both the applied researcher looking for suitable solution approaches for particular problems as well as for the theoretical researcher looking for effective and efficient methods of stochastic dynamic optimization and approximate dynamic programming (ADP). To this end, the book contains two parts. In the first part, the general methodology required for modeling and approaching SDVRPs is presented. It presents adapted and new, general anticipatory

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methods of ADP tailored to the needs of dynamic vehicle routing. Since stochastic dynamic optimization is often complex and may not always be intuitive on first glance, the author accompanies the ADP-methodology with illustrative examples from the field of SDVRPs. The second part of this book then depicts the application of the theory to a specific SDVRP. The process starts from the real-world application. The author describes a SDVRP with stochastic customer requests often addressed in the literature, and then shows in detail how this problem can be modeled as a Markov decision process and presents several anticipatory solution approaches based on ADP. In an extensive computational study, he shows the advantages of the presented approaches compared to conventional heuristics. To allow deep insights in the functionality of ADP, he presents a comprehensive analysis of the ADP approaches.

This book gathers a selection of the best papers presented at the joint international conference ICIEOM-CIO-IIE 2015, offering recent research on industrial engineering, management and operations from an international and interdisciplinary perspective. It includes contributions from different fields, such as operations research, modeling and simulation, production and service management and logistics, information systems and quality, and as such is of interest to both researchers and

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practitioners. Reflecting the interconnected nature of today's production systems, characterized by intense flows of goods, information and individuals between companies and nations, it is a valuable resource for anyone wanting an in-depth understanding of the field to guide managerial practice in order to take full advantage of existing opportunities.

Production costs are being reduced by automation, robotics, computer-integrated manufacturing, cost reduction studies and more. These new technologies are expensive to buy, repair, and maintain. Hence, the demand on maintenance is growing and its costs are escalating. This new environment is compelling industrial maintenance organizations to make the transition from fixing broken machines to higher-level business units for securing production capacity. On the academic front, research in the area of maintenance management and engineering is receiving tremendous interest from researchers. Many papers have appeared in the literature dealing with the modeling and solution of maintenance problems using operations research (OR) and management science (MS) techniques. This area represents an opportunity for making significant contributions by the OR and MS communities. Maintenance, Modeling, and Optimization provides in one volume the latest developments in the area of maintenance modeling. Prominent scholars have

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contributed chapters covering a wide range of topics. We hope that this initial contribution will serve as a useful informative introduction to this field that may permit additional developments and useful directions for more research in this fast-growing area. The book is divided into six parts and contains seventeen chapters. Each chapter has been subject to review by at least two experts in the area of maintenance modeling and optimization. The first chapter provides an introduction to major maintenance modeling areas illustrated with some basic models. Part II contains five chapters dealing with maintenance planning and scheduling. Part III deals with preventive maintenance in six chapters. Part IV focuses on condition-based maintenance and contains two chapters. Part V deals with integrated production and maintenance models and contains two chapters. Part VI addresses issues related to maintenance and new technologies, and also deals with Just-in-Time (JIT) and Maintenance. WSC is the premier international forum for disseminating recent advances in the field of system simulation. In addition to a technical program of unsurpassed scope and quality, WSC provides the central meeting for practitioners, researchers, and vendors.

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