Operation And Modeling Of The Mos Transistor 4th Ed

From the contents: Initial planning for urban transit systems (S.C. Wirasinghe). - Public transport timetabling and vehicle scheduling (A. Ceder). - Designing public transport network and routes (A. Ceder). - Transit path choice and assignment model approaches (A. Nuzzolo). - Schedule-based transit assignment models (A. Nuzzolo). - Frequency based transit route choice models (M. Florian).

Covers freight and passenger operations, route design, and contemporary railroading operations. The step-by-step design techniques and operation-oriented track plans also make it easy to create your own realistic model railroad.

"Combat Modeling" is a systematic learning resource and reference text for the quantitative analysis of combat. After a brief overview, authors Washburn and Kress present individual chapters on shooting without feedback; shooting with feedback; target defense; attrition models; game theory and wargames; search; unmanned aerial vehicles; and terror and insurgency. Three appendices provide a review of basic probability concepts, probability distributions, and Markov models; an introduction to optimization models; and a discussion of Monte-Carlo simulations. Drawing on their many years of experience at the Naval Postgraduate School in Monterey, California, Washburn and Kress have created a reference that will provide the tools and techniques for analysts involved in the underpinnings of combat decisions. This is a book that can be used as a military manual, reference book, and textbook for military courses on this vital subject.

The use of modeling and simulation tools is rapidly gaining prominence in the pharmaceutical industry covering a wide range of applications. This book focuses on modeling and simulation tools as they pertain to drug product manufacturing processes, although similar principles and tools may apply to many other areas. Modeling tools can improve fundamental process understanding and provide valuable insights into the manufacturing processes, which can result in significant process improvements and cost savings. With FDA mandating the use of Quality by Design (QbD) principles during manufacturing, reliable modeling techniques can help to alleviate the costs associated with such efforts, and be used to create in silico formulation and process design space. This book is geared toward detailing modeling techniques that are utilized for the various unit operations during drug product manufacturing. By way of examples that include case studies, various modeling principles are explained for the nonexpert end

users. A discussion on the role of modeling in quality risk management for manufacturing and application of modeling for continuous manufacturing and biologics is also included. Explains the commonly used modeling and simulation tools Details the modeling of various unit operations commonly utilized in solid dosage drug product manufacturing Practical examples of the application of modeling tools through case studies Discussion of modeling techniques used for a risk-based approach to regulatory filings Explores the usage of modeling in upcoming areas such as continuous manufacturing and biologics manufacturingBullet points

Multi-Echelon Techniques

Predictive Modeling of Pharmaceutical Unit Operations

Modeling, Simulation, and Equipment Operations

A Linear Programming Formulation

Food Processing Operations Modeling

Prototype Railroad Concepts for Your Model Railroad

State of the art of combined cooling, heating, and power (CCHP) systems -- An optimal switching strategy for operating CCHP systems -- A balance space based operation strategy for CCHP systems -- Energy hub modeling and optimization based operation strategy for CCHP systems -- Short-term load forecasting and post-strategy design for CCHP systems -- Complementary configuration and operation of a CCHPORC system

Bridging the gap between theory and application, this reference demonstrates the operational mechanisms, modeling, and simulation of equipment for the combustion and gasification of solid fuels. Solid Fuels Combustion and Gasification: Modeling, Simulation, and Equipment Operation clearly illustrates procedures to improve and optimize the de

Modeling, Operation, and Analysis of DC Grids presents a unified vision of direct current grids with their core analysis techniques, uniting power electronics, power systems, and multiple scales of applications. Part one presents high power applications such as HVDC transmission for wind energy, faults and protections in HVDC lines, stability analysis and inertia emulation. The second part addresses current applications in low voltage such as microgrids, power trains and aircraft applications. All chapters are self-contained

with numerical and experimental analysis. Provides a unified, coherent presentation of DC grid analysis based on modern research in power systems, power electronics, microgrids and MT-HVDC transmission Covers multiple scales of applications in one location, addressing DC grids in electric vehicles, microgrids, DC distribution, multi-terminal HVDC transmission and supergrids Supported by a unified set of MATLAB and Simulink test systems designed for application scenarios

From driverless cars to vehicular networks, recent technological advances are being employed to increase road safety and improve driver satisfaction. As with any newly developed technology, researchers must take care to address all concerns, limitations, and dangers before widespread public adoption. Intelligent Transportation and Planning: Breakthroughs in Research and Practice is an innovative reference source for the latest academic material on the applications, management, and planning of intelligent transportation systems. Highlighting a range of topics, such as automatic control, infrastructure systems, and system architecture, this publication is ideally designed for engineers, academics, professionals, and practitioners actively involved in the transportation planning sector.

Student's Guide to Operations Research

Modeling Food Processing Operations

Models and Methods in Linear Optimization

From High Power DC Transmission to DC Microgrids

How to Run Your Trains Like the Real Thing

Optimal Inventory Modeling of Systems

Nordic Approaches to Peace Operations

: Information is power in supply chain operations, negotiations, continuous improvement programs, and process improvement, and indeed in all aspects of managing an operation. Accurate and timely information can result in better decisions that translate into improvement of bottom line results. The development and effective use of cost modeling as a method to understand the cost of products, services, and processes can help drive improvements in the quality and timeliness of decision making. In the supply chain community an understanding of the actual cost structures of products and services, whether with new or non-partner suppliers, can facilitate fact-based discussions which are more likely to

result in agreements that are competitively priced and with fair margins. Further, accurate cost models which are cooperatively developed between supply chain partners can form the basis for joint efforts to reduce non-value-added costs and provide additional focus towards operational improvement. While many organizations feel confident they have an understanding of the cost structure for products and services produced internally, cost modeling often uncovers areas where significant cost improvement can be obtained. Cost of quality is a particular type of internal cost model that analyzes the true costs associated with the production of less than perfect products and services. The development of a cost of quality model can provide insight into how products or services of higher quality can be produced at lower cost. This book provides the business student or professional a concise guide to the creation and effective use of both internal and external cost models. Development of internal cost models is discussed with illustrations showing how they can be deployed to assist in new product development, pricing decisions, make-or-buy decisions and the identification of opportunities for internal process improvement projects. The creation and use of external cost models are discussed providing insight into how their use can drive collaborative improvement efforts among supply chain partners, better prepare for price negotiations, and keep negotiations focused on facts rather than emotions--all while allowing for future discussions with preferred suppliers to focus on more strategic and operational improvement initiatives, and less on pricing. A number of detailed cost model examples are provided to educate on both how cost models are constructed, and to demonstrate how they have been effectively deployed

Most books on inventory theory use the item approach to determine stock levels, ignoring the impact of unit cost, echelon location, and hardware indenture. Optimal Inventory Modeling of Systems is the first book to take the system approach to inventory modeling. The result has been dramatic reductions in the resources to operate many systems - fleets of aircraft, ships, telecommunications networks, electric utilities, and the space station. Although only four chapters and appendices are totally new in this edition, extensive revisions have been made in all chapters, adding numerous worked-out examples. Many new applications have been added including commercial airlines, experience gained during Desert Storm, and adoption of the Windows interface as a standard for personal computer models.

This addition to the ISOR series introduces complementarity models in a straightforward and approachable manner and uses them to carry out an in-depth analysis of energy markets, including formulation issues and solution techniques. In a nutshell, complementarity models generalize: a. optimization problems via their Karush-Kuhn-Tucker conditions b. on-cooperative games in which each player may be solving a separate but related optimization problem with potentially overall system constraints (e.g., market-clearing conditions) c. conomic and engineering problems that aren't specifically derived from optimization problems (e.g., spatial price equilibria) d. roblems in which both primal and dual variables (prices) appear in the original formulation (e.g., The National Energy Modeling System (NEMS) or its precursor, PIES). As such, complementarity models are a very general and flexible modeling format. A natural question is why

concentrate on energy markets for this complementarity approach? s it turns out, energy or other markets that have game theoretic aspects are best modeled by complementarity problems. The reason is that the traditional perfect competition approach no longer applies due to deregulation and restructuring of these markets and thus the corresponding optimization problems may no longer hold. Also, in some instances it is important in the original model formulation to involve both primal variables (e.g., production) as well as dual variables (e.g., market prices) for public and private sector energy planning. Traditional optimization problems can not directly handle this mixing of primal and dual variables but complementarity models can and this makes them all that more effective for decision-makers.

Since the 1960s, operations research (or, alternatively, management science) has become an indispensable tool in scientific management. In simple words, its goal on the strategic and tactical levels is to aid in decision making and, on the operational level, automate decision making. Its tools are algorithms, procedures that create and improve solutions to a point at which optimal or, at least, satisfactory solutions have been found. While many texts on the subject emphasize methods, the special focus of this book is on the applications of operations research in practice. Typically, a topic is introduced by means of a description of its applications, a model is formulated and its solution is presented. Then the solution is discussed and its implications for decision making are outlined. We have attempted to maximize the understanding of the topics by using intuitive reasoning while keeping mathematical notation and the description of techniques to a minimum. The exercises are designed to fully explore the material covered in the chapters, without resorting to mind-numbing repetitions and trivialization.

Advanced Modeling for Transit Operations and Service Planning

Consumer-Driven Demand and Operations Management Models

A Quick Course in Simulation Modeling

Modeling, Optimization, and Operation

A Model-Based Approach

Design and Analysis, Second Edition

A New Model in the Making?

The food industry is on the verge of making some serious advances in the food processing sector. If successful, tomorrow's consumers will have unhindered access to safe, nutritious, and high-quality products via novel food processing technologies. Food Processing Operations Modeling: Design and Analysis, Second Edition demonstrates how to effectively use numerical modeling to predict the effects of food processing on targeted components. This non-destructive testing method virtually eliminates the health risks of

under-processed food and maintains high nutritional values that are often lost in overcooked food. Using a task-oriented approach, this second edition discusses basic and advanced modeling tools that allow researchers to predict and prevent worse-case scenarios, perform comprehensive analyses, and optimize system design and efficiency. Contains Selected Applications of Thermal and Non-Thermal Processing Operations NEW TO THIS EDITION: Six new chapters on radio frequency heating, high-pressure processing, pulsed electric field treatment, fouling model on heat exchangers, ozone treatment, and UV radiation Expanded scope to address innovative and up-to-date food processing technologies Numerous real-world case studies Updated information on infrared heating of biological materials and modeling electrical resistance heating of foods Electromagnetic treatments (RF, Infrared, and UV) and fundamentals relative to heat and mass transfer, fluid flow, and stochastic processes Synergistic effect of combined food processing techniques and its numerical simulation Food processing methods are constantly improving in an effort to maintain safe, high-quality, and fresh-tasting products. Providing the theoretical basis for these cutting-edge techniques, this tried-and-tested reference provides indispensable insight into food systems modeling, while exploring applications for further research.

This is a new examination of Nordic approaches to peace operations after the Cold War and how they have remained relevant. They continue to have much to offer to both academics and practitioners in this particular field.

Most successful companies have operations management at their heart. It should enable strategy and should be part of boardroom discussions. However, Cranfield research has shown that business strategy barely recognises the world of operations management. Recognising that operations management needs to be more strategic, Business Operations Models is a revolutionary new title that looks at the interrelationship of operations management and strategy. In Business Operations Models, Martin Christopher and Alan Braithwaite identify the characteristics of market-leading businesses that have transformed their markets and delivered super performance for their stakeholders. It points to the theory gap between strategic thinking and operations and how many high-

performing businesses arrive at their new operating models as much by chance as judgement. Unpacking those observations leads to some clearly defined features of winning competitors, including eliminating waste, leveraging technology, and utilising transformative business models. Business Operations Models offers a framework for achieving super performance and understanding when and how a company may be able to leverage its capabilities to outperform. The book provides detailed international case studies that illustrate how the principles work in practice, including Apple, Dell, Amazon, John Lewis, Southwest airlines, Aldi, Toyota and many others.

Operation and Modeling of the MOS TransistorOxford University Press, USA

Development of a Multi-modal Optimal Operations Model for the Northeast Corridor

Business Operations Models

Operation and Modeling of the MOS Transistor

Better Business Decisions Using Cost Modeling

Complementarity Modeling in Energy Markets

Methods, Models and Applications in the Supply Chain

The Physical and Mathematical Modeling of Tundish Operations

Computational modeling is an important tool for understanding and improving food processing and manufacturing. It is used for many different purposes, including process design and process optimization. However, modeling goes beyond the process and can include applications to understand and optimize food storage and the food supply chain, and to perform a life cycle analysis. Modeling Food Processing Operations provides a comprehensive overview of the various applications of modeling in conventional food processing. The needs of industry, current practices, and state-of-the-art technologies are examined, and case studies are provided. Part One provides an introduction to the topic, with a particular focus on modeling and simulation strategies in food processing operations. Part Two reviews the modeling of various food processes involving heating and cooling. These processes include: thermal inactivation; sterilization and pasteurization; drying; baking; frying; and chilled and frozen food processing, storage and display. Part Three examines the modeling of multiphase unit operations such as membrane separation, extrusion processes and food digestion, and reviews models used to optimize food distribution. Comprehensively reviews the various applications of modeling in conventional food processing Examines the modeling of multiphase unit operations and various food processes involving heating and cooling Analyzes the models used to optimize food distribution

Uniquely blends mathematical theory and algorithm design forunderstanding and modeling real-world problems Optimization modeling and algorithms are key components toproblem-solving across various fields of research, from operationsresearch and mathematics to computer science and engineering.Addressing the importance of the algorithm design process.Deterministic Operations Research focuses on the design

ofsolution methods for both continuous and discrete linearoptimization problems. The result is a clear-cut resource forunderstanding three cornerstones of deterministic operationsresearch: modeling real-world problems as linear optimizationproblem; designing the necessary algorithms to solve theseproblems; and using mathematical theory to justify algorithmicdevelopment. Treating real-world examples as mathematical problems, theauthor begins with an introduction to operations research andoptimization modeling that includes applications form sportsscheduling an the airline industry. Subsequent chapters discussalgorithm design for continuous linear optimization problems,covering topics such as convexity. Farkas ' Lemma, and thestudy of polyhedral before culminating in a discussion of theSimplex Method. The book also addresses linear programming dualitytheory and its use in algorithm design as well as the Dual SimplexMethod. Dantzig-Wolfe decomposition, and a primal-dual interiorpoint algorithm. The final chapters present network optimizationand integer programming problems, highlighting various specializedtopics including label-correcting algorithms for the shortest pathproblem, preprocessing and probing in integer programming, liftingof valid inequalities, and branch and cut algorithms. Concepts and approaches are introduced by outlining examplesthat demonstrate and motivate theoretical concepts. The accessiblepresentation of advanced ideas makes core aspects easy tounderstand and encourages readers to understand how to think aboutthe problem, not just what to think. Relevant historical summariescan be found throughout the book, and each chapter is designed asthe continuation of the " story " of how to both modeland solve optimization problems by using the specificproblems-linear and integer programs-as guides. The book 's various examples are accompanied by the appropriate models andcalculations, and a related Web site features these models alongwith Maple™ and MATLAB ® content for the discussedcalculations. Thoroughly class-tested to ensure a straightforward, hands-onapproach, Deterministic Operations Research is an excellentbook for operations research of linear optimization courses at theupper-undergraduate and graduate levels. It also serves as aninsightful reference for individuals working in the fields ofmathematics, engineering, computer science, and operations researchwho use and design algorithms to solve problem in their everydaywork.

This book explains the concept of man-machine systems by using the mining industry. The goal is to use a mathematical model based approach to improve the quality of human life of the workers and operators with the enhancement of productivity by controlling the process variables. The book will illustrate the formulation of mathematical modelling for manual operations. It will provide details in the investigation of many machine systems through the case study approach and provide data analysis using the concept of mathematical modelling and sensitivity. It presents how to solve a field problem through a field data-based modelling concept and highlights the collection of anthropometry data and its behavior. The book will be useful for researchers, academic libraries, professionals, post graduate students of Industrial, Mechanical, and Manufacturing Engineering programs.

This book is the first work to conduct the emergency logistics optimization problem under the epidemic environment (whether natural or man-made), which provides a new perspective for the application of optimization theory. In this book, the research methods involve epidemic dynamics, scenario-based emergency decision-making method, big data which combines the traditional and emerging technologies. The authors take epidemic outbreak as the research object and deeply integrate the epidemic spread model with the optimization model of emergency resource scheduling, which opens up a novel application area of operations research.

Deterministic Operations Research

Discrete-Event Simulation
A Systematic Study of Information-Technology-Enabled Sales Mechanisms
For Procurement, Operations, and Supply Chain Professionals
Track Planning for Realistic Operation
Intelligent Transportation and Planning: Breakthroughs in Research and Practice
The Operation and Modeling of Ratio-independent Algorithimic Analog-to-digital Conversion

A comprehensive survey of thermal processing and modelling techniques in food process engineering. It combines theory and practice to solve actual problems in the food processing industry - emphasizing heat and mass transfer, fluid flow, electromagnetics, stochastic processes, and neural network analysis in food systems. There are specific case stu

Decision-making is an important task no matter the industry. Operations research, as a discipline, helps alleviate decision-making problems through the extraction of reliable information related to the task at hand in order to come to a viable solution. Integrating stochastic processes into operations research and management can further aid in the decision-making process for industrial and management problems. Stochastic Processes and Models in Operations Research emphasizes mathematical tools and equations relevant for solving complex problems within business and industrial settings. This research-based publication aims to assist scholars, researchers, operations managers, and graduate-level students by providing comprehensive exposure to the concepts, trends, and technologies relevant to stochastic process modeling to solve operations research problems.

This unique book describes how the General Algebraic Modeling System (GAMS) can be used to solve various power system operation and planning optimization problems. This book is the first of its kind to provide readers with a comprehensive reference that includes the solution codes for basic/advanced power system optimization problems in GAMS, a computationally efficient tool for analyzing optimization problems in power and energy systems. The book covers theoretical background as well as the application examples and test case studies. It is a suitable reference for dedicated and general audiences including power system professionals as well as researchers and developers from the energy sector and electrical power engineering community and will be helpful to undergraduate and graduate students.

While there are several texts on how to solve and analyze stochastic programs, this is the first text to address basic questions about how to model uncertainty, and how to reformulate a deterministic model so that it can be analyzed in a stochastic setting. This text would be suitable as a stand-alone or supplement for a second course in OR/MS or in optimization-oriented engineering disciplines where the instructor wants to explain where models come from and what the fundamental issues are. The book is easy-to-read, highly illustrated with lots of examples and discussions. It will be suitable for graduate

students and researchers working in operations research, mathematics, engineering and related departments where there is interest in learning how to model uncertainty. Alan King is a Research Staff Member at IBM's Thomas J. Watson Research Center in New York. Stein W. Wallace is a Professor of Operational Research at Lancaster University Management School in England.

Realistic Model Railroad Operation

Epidemic-logistics Modeling: A New Perspective on Operations Research

Design and Analysis

Mathematical Modeling and Simulation

Stochastic Processes and Models in Operations Research

Intelligent Systems in Operations: Methods, Models and Applications in the Supply Chain

Insights from Basic Operations Management Models and Principles

This is the first book in the field that uses the power of the basic models and principles to provide students and managers with an "intuitive understanding" of operations management. The book touches on nine fundamental models and principles, and outlines the key insights behind each one. Some of the very biggest names in the Management Science field have developed and carefully written these chapters on the field's basic models.

Modern, large-scale analog integrated circuits (ICs) are essentially composed of metal-oxide semiconductor (MOS) transistors and their interconnections. As technology scales down to deep sub-micron dimensions and supply voltage decreases to reduce power consumption, these complex analog circuits are even more dependent on the exact behavior of each transistor. High-performance analog circuit design requires a very detailed model of the transistor, describing accurately its static and dynamic behaviors, its noise and matching limitations and its temperature variations. The charge-based EKV (Enz-Krummenacher-Vittoz) MOS transistor model for IC design has been developed to provide a clear understanding of the device properties, without the use of complicated equations. All the static, dynamic, noise, non-quasi-static models are completely described in terms of the inversion charge at the source and at the drain taking advantage of the symmetry of the device. Thanks to its hierarchical structure, the model offers several coherent description levels, from basic hand calculation equations to complete computer simulation model. It is also compact, with a minimum number of process-dependant device parameters. Written by its developers, this book provides a comprehensive treatment of the EKV charge-based model of the MOS transistor for the design and simulation of low-power analog and RF ICs. Clearly split into three parts, the authors systematically examine: the basic long-channel intrinsic charge-based model, including all the fundamental aspects of the EKV MOST model such as the basic large-signal static model, the noise model, and a discussion of temperature effects and matching properties; the extended charge-based model, presenting important information for understanding the operation of deep-submicron devices; the high-frequency model, setting out a complete MOS transistor model required for designing RF CMOS integrated circuits.

Practising engineers and circuit designers in the semiconductor device and electronics systems industry will find this book a valuable guide to the modelling of MOS transistors for integrated circuits. It is also a useful reference for advanced students in electrical and computer engineering.

This important book is by top scholars in supply chain management, revenue management, and e-commerce, all of which are grounded in information technologies and consumer demand research. The book looks at new selling techniques designed to reach the consumer.

The first practical textbook on AnyLogic 7 from AnyLogic developers. AnyLogic is the unique simulation software that supports three simulation modeling methods: system dynamics, discrete event, and agent based modeling and allows you to create multi-method models. The book is structured around four examples: a model of a consumer market, an epidemic model, a job shop model and an airport model. We also give some theory on different modeling methods. You can consider this book as your first guide in studying AnyLogic 7.

Classical and Object-oriented Software Engineering with UML and Java

Modeling, Operation, and Analysis of DC Grids

Power System Optimization Modeling in GAMS

The EKV Model for Low-Power and RF IC Design

Case Studies on Drilling Operations in the Ore Mining Industry

Operations Research

Charge-Based MOS Transistor Modeling

The MOS (Metal Oxide Semiconductor) transistor is the most important building block of modern silicon integrated circuits. This book fills an important gap in the literature by presenting a unified treatment of the operation and modeling of the MOS transistor that is complemented with extensive intuitive discussions.The MOS transistor is the dominant VLSI (Very Large Scale Integration) device, and understanding of this device is mandatory for those people planning a career in device physics and modeling as well as in circuit design. Especially important for university courses, there is a logical, systematic and progressive description that starts with semiconductor fundamentals and builds up to a comprehensive understanding of the basics of MOS transistors. For practicing professionals there are details of nuances observed in MOS transistor behavior, and various approaches to modeling these are presented. Detailed derivations are given for modeling dc currents, charges for large-signal operation, small-signal operation at low frequencies and high frequencies, and noise.

"This book provides knowledge and insights on present and future AI applications in Operations Management presenting tools and decisions in terms of theoretical and empirical models, methods and proposed applications"--Provided by publisher.

Industrial engineering has expanded from its origins in manufacturing to transportation, health care, logistics, services, and more. A

common denominator among all these industries, and one of the biggest challenges facing decision-makers, is the unpredictability of systems. Probability Models in Operations Research provides a comprehensive overview of the probabilistic and stochastic modeling approaches commonly used to capture the randomness in industrial and systems engineering.

In recent years it has been recognized that tundishes playa critical role in affecting the quality of the finished steel products. Furthermore, proper tundish design may be even more important in the development of the novel continuous casting pro cesses that are now in varying stages of realizatic)ll. Traditionally, physical modeling has played a key role in tundish design, but the recently evolved computational software packages, the readily accessible computa tional hardware, and, perhaps most important, the growing experience with tackling a broad range of computational fluid flow problems within a metallurgical context have made mathematical modeling an important factor in this field. Our aim in writing this book has been to bring realistic perspectives to tundish design. The main purpose is to provide a good physical understanding of what is happening in tundishes, together with a realistic discussion of topics that are still not quite clear. The process metallurgist active in this field has many tools at his or her disposal, including mathematical modeling, physical modeling, and measure ments on full plant-scale systems. In this monograph we seek to show how these ideas may be combined to provide a good basic understanding and, hence, an attempt at an optimal design.

Modeling with Stochastic Programming

Combined Cooling, Heating, and Power Systems

Building Intuition

Solid Fuels Combustion and Gasification

Becoming a Disruptive Competitor

River-operations Model for Upper Carson River Basin, California and Nevada

Modeling, Programming, and Analysis

"This is an excellent and well-written text on discrete event simulation with a focus on applications in Operations Research. There is substantial attention to programming, output analysis, pseudo-random number generation and modelling and these sections are quite thorough. Methods are provided for generating pseudo-random numbers (including combining such streams) and for generating random numbers from most standard statistical distributions." --ISI Short Book Reviews, 22:2, August 2002

Develop realistic operating sessions and operate your model railroad like a full-sized one. The book covers how to forward cars, move trains, and use signal systems.

Water Resources Optimum Operations Model

Probability Models in Operations Research

Combat Modeling

Breakthroughs in Research and Practice
AnyLogic 7 in Three Days
Terminal Operations Model of the Control of Air Traffic