# Smartplant Review Installation Guide Intergraph

The multinational firm and its main vehicle, foreign direct investment, are key forces in economic globalization. Their importance to the world economy can be seen in the fact that since 1990 foreign direct investment has grown more rapidly than the world GDP and world trade. Despite this, the causes and consequences of multinational firm activity are little understood and until recently relatively unexamined in the theoretical literature. This CESifo volume fills this gap, examining the multinational enterprise (MNE) and foreign direct investment (FDI) from both theoretical and empirical perspectives. In the theoretical chapters, leading scholars take a wide range of modern analytical approaches--from new growth and trade theories to new economic geography, industrial organization, and game theory. Taking current theoretical work on MNE and FDI as a starting point and aiming to extend the existing theoretical framework, the contributors consider such topics as investment liberalization and firm location, tax competition, and welfare consequences of FDI and outsourcing. The empirical chapters test several of the key hypotheses of recent theoretical work on MNE and FDI, examining topics that include productivity effects on Italian MNEs, the different effects of outsourcing in Austria and Poland, location decisions of MNEs in the European Union, and other topics. ContributorsOscar Amerighi, Bruce A. Blonigen, Steven Brakman, Davide Castellani, Ronald B. Davies, Alan V. Deardorff, Fabrice Defever, Harry Garretsen, Anders N. Hoffman, Andzelika Lorentowicz, James R. Markusen, Charles van Marrewijk, Dalia Marin, James R. Marukusen, Alireza Naghavi, Helen T. Naughton, Giorgio Barba Navaretti, J. Peter Neary, Gianmarco Ottaviano, Alexander Raubold, Glen R. WaddellSteven Brakman is Professor of Globalization in the Faculty of Economics at the University of Groningen. Harry Garretsen is Professor of International Economics at the Utrecht School of Economics, Utrecht University.

Design of Pulse Oximeters describes the hardware and software needed to make a pulse oximeter, and includes the equations, methods, and software required for them to function effectively. The book begins with a brief description of how oxygen is delivered to the tissue, historical methods for measuring oxygenation, and the invention of the pulse oximeter in the early 1980s. Subsequent chapters explain oxygen saturation display and how to use an LED, provide a survey of light sensors, and review probes and cables. The book closes with an assessment of techniques that may be used to analyze pulse oximeter performance and a brief overview of pulse oximetry applications. The book contains useful worked examples, several worked equations, flow charts, and examples of algorithms used to calculate oxygen saturation. It also includes a glossary of terms, instructional objectives by chapter, and references to further reading. IMPROVE stands for "Information Technology Support for Collaborative and Distributed Design Processes in Chemical

Engineering" and is a large joint project of research institutions at RWTH Aachen University. This volume summarizes the results after 9 years of cooperative research work. The focus of IMRPOVE is on understanding, formalizing, evaluating, and, consequently, improving design processes in chemical engineering. In particular, IMPROVE focuses on conceptual design and basic engineering, where the fundamental decisions concerning the design or redesign of a chemical plant are undertaken. Design processes are analyzed and evaluated in collaboration with industrial partners.

Defense Federal Acquisition Regulation Supplement

Recommended Practice for Design and Use

FPGA-based System Design

I&CS.

Petrochemical Machinery Insights

Plantwide Control

BIM (Building Information Modelling) is transforming working practices across the built environment sector, as clients, professionals, contractors and manufacturers throughout the supply chain grasp the opportunities that BIM presents. The first book ever to focus on the implementation of BIM processes in landscape and external works, BIM for Landscape will help landscape professionals understand what BIM means for them. This book is intended to equip landscape practitioners and practices to meet the challenges and reap the rewards of working in a BIM environment - and to help professionals in related fields to understand how BIM processes can be brought into landscape projects. BIM offers significant benefits to the landscape profession, and heralds a new chapter in inter-disciplinary relationships. BIM for Landscape shows how BIM can enhance collaboration with other professionals and clients, streamline information processes, improve decision-making and deliver well-designed landscape projects that are right first time, on schedule and on budget. This book looks at the organisational, technological and professional practice implications of BIM adoption. It discusses in detail the standards, structures and information processes that form BIM Level 2-compliant workflows, highlighting the role of the landscape professional within the new ways of working that BIM entails. It also looks in depth at the digital tools used in BIM projects, emphasising the 'information' in Building Information Modelling, and the possibilities that data-rich models offer in landscape design, maintenance and management. BIM for Landscape will be an essential companion to the landscape professional at any stage of their BIM journey.

Motivation for this Book Ontologies have received increasing attention over the last two decades. Their roots can be traced back to the ancient philosophers, who were interested in a c- ceptualization of the world. In the more recent past, ontologies and ontological engineering have evolved in computer science, building on various roots

such as logics, knowledge representation, information modeling and management, and (knowledge-based) information systems. Most recently, largely driven by the next generation internet, the so-called Semantic Web, ontological software engineering has developed into a scientific field of its own, which puts particular emphasis on the theoretical foundations of representation and reasoning, and on the methods and tools required for building ontology-based software applications in diverse domains. Though this field is largely dominated by computer science, close re- tionships have been established with its diverse areas of application, where - searchers are interested in exploiting the results of ontological software engine- ing, particularly to build large knowledge-intensive applications at high productivity and low maintenance effort. Consequently, a large number of scientific papers and monographs have been p- lished in the very recent past dealing with the theory and practice of ontological software engineering. So far, the majority of those books are dedicated to the th- retical foundations of ontologies, including philosophical treatises and their re- tionships to established methods in information systems and ontological software engineering.

Construction managers, architects, and civil engineers are working in an environment of rapidly changing and improving information technologies. This handy manual explores the entire spectrum of IT applications in construction, from traditional computer applications to emerging Web-based and mobile technologies. Information can be applied to firms of all sizes and features suggestions for IT solutions that can be implemented for complex projects as well as small, low cost ventures. Estimating, scheduling, web logs, project web portals, content management systems, document management systems, 4D CAD, mobile and field computing, and wireless computing are all discussed. Check out our app, DEWALT® Mobile Pro(tm). This free app is a construction calculator with integrated reference materials and access to hundreds of additional calculations as add-ons. To learn more, visit dewalt.com/mobilepro.

Code like a Pro in C#

The Piping and Instrumentation Diagrams (P&ID) Handbook

Foreign Direct Investment and the Multinational Enterprise

Autofact III

A Re-Usable Ontology for Chemical Process Engineering

Instrumentation & Control Systems

**What is SQL injection? -- Testing for SQL injection -- Reviewing code for SQL injection -- Exploiting SQL injection -- Blind SQL injection exploitation -- Exploiting the operating system -- Advanced topics -- Code-level defenses -- Platform level defenses -- Confirming and recovering from SQL injection attacks -- References.**

This book presents a collection of state of the art research on GPU Computing and Application. The major part of this book is selected from the work presented at the 2013 Symposium on GPU Computing and Applications held in Nanyang Technological University, Singapore (Oct 9, 2013). Three major domains of GPU application are covered in the book including (1) Engineering design and simulation; (2) Biomedical Sciences; and (3) Interactive & Digital Media. The book also addresses the fundamental issues in GPU computing with a focus on big data processing. Researchers and developers in GPU Computing and Applications will benefit from this book. Training professionals and educators can also benefit from this book to learn the possible application of GPU technology in various areas.

Geographic information systems have developed rapidly in the past decade, and are now a major class of software, with applications that include infrastructure maintenance, resource management, agriculture, Earth science, and planning. But a lack of standards has led to a general inability for one GIS to interoperate with another. It is difficult for one GIS to share data with another, or for people trained on one system to adapt easily to the commands and user interface of another. Failure to interoperate is a problem at many levels, ranging from the purely technical to the semantic and the institutional. Interoperating Geographic Information Systems is about efforts to improve the ability of GISs to interoperate, and has been assembled through a collaboration between academic researchers and the software vendor community under the auspices of the US National Center for Geographic Information and Analysis and the Open GIS Consortium Inc. It includes chapters on the basic principles and the various conceptual frameworks that the research community has developed to think about the problem. Other chapters review a wide range of applications and the experiences of the authors in trying to achieve interoperability at a practical level. Interoperability opens enormous potential for new ways of using GIS and new mechanisms for exchanging data, and these are covered in chapters on information marketplaces, with special reference to geographic information. Institutional arrangements are also likely to be profoundly affected by the trend towards interoperable systems, and nowhere is the impact of interoperability more

likely to cause fundamental change than in education, as educators address the needs of a new generation of GIS users with access to a new generation of tools. The book concludes with a series of chapters on education and institutional change. Interoperating Geographic Information Systems is suitable as a secondary text for graduate level courses in computer science, geography, spatial databases, and interoperability and as a reference for researchers and practitioners in industry, commerce and government.

For the Design and Drafting of Industrial Piping Systems

Collaborative and Distributed Chemical Engineering. From Understanding to Substantial Design Process Support

An Applied Guide to Process and Plant Design

GPU Computing and Applications

Autofact 6

The Engineer's Guide to Plant Layout and Piping Design for the Oil and Gas Industries

*This book focuses on Chemical Engineering and Processing, covering interdisciplinary innovation technologies and sciences closely related to chemical engineering, such as computer image analysis, modelling and IT. The book presents interdisciplinary aspects of chemical and biochemical engineering interconnected with process system engineering, process safety and computer science.*

*Bestselling author Ron Krutz once again demonstrates hisability to make difficult security topics approachable with thisfirst in-depth look at SCADA (Supervisory Control And DataAcquisition) systems Krutz discusses the harsh reality that natural gas pipelines,nuclear plants, water systems, oil refineries, and other industrialfacilities are vulnerable to a terrorist or disgruntled employeecausing lethal accidents and millions of dollars of damage-and whatcan be done to prevent this from happening Examines SCADA system threats and vulnerabilities, theemergence of protocol standards, and how security controls can beapplied to ensure the safety and security of our nationalinfrastructure assets*

*MOP 141 provides a vital overview on the design and use of wood poles for overhead utility line structures using sound engineering practices.*

*Information Technology for Construction Managers, Architects and Engineers*

*Bad Data Handbook*

*Interoperating Geographic Information Systems*

*Recent Developments and Applications*

*Training Manual for Industrial Training Institutes and Centres*

*Teach Yourself MicroStation J*

The project to replace the 46 Fire and Rescue Services' local control rooms across England with nine purpose-built regional control centres linked by a new IT system has been a comprehensive failure. The Department for Communities and Local Government acted to cut its losses by terminating the contract in December 2010, seven years after it had begun, but at least £469 million will have been wasted, with no IT system delivered and eight of the nine new regional control centres remaining empty and costly to maintain. The Department tried to impose a national control system, without having sufficient mandatory powers and without properly consulting with the Fire and Rescue Services. The Department rushed the start of the project, failing to follow proper procedures. Ineffective checks and balances during initiation and early stages meant the Department committed itself to the project on the basis of broad-brush and inaccurate estimates of costs and benefits and an unrealistic delivery timetable, and agreed an inadequate contract with its IT supplier. The Department under-appreciated the project's complexity, and then mismanaged the IT contractor's performance and delivery. The Department failed to provide the necessary leadership to make the project successful, over-relying on poorly managed consultants and failing to sort out early problems with delivery by the contractor. The Department is now trying to minimise the future cost of the project by subsidising Fire and Rescue Services to use the Regional Control Centres.

Petrochemical Machinery Insights is a priceless collection of solutions and advice from Heinz Bloch on a broad range of equipment management themes, from wear to warranty issues, organizational problems and oil mist lubrication, and professional growth and pre-purchase of machinery. The author draws on his industry experience to hone in on important problems that do not get addressed in other books, providing actionable details that engineers can use. Mechanical, reliability, and process engineers will find this book the next best thing to having Heinz Bloch on speed dial. Focuses on pieces of hard-won experience from the industry that are rarely included in other books Presents not just a guide to technical problems, but also to crucial themes in management and organization Includes an informal and honest style, making author Heinz Bloch's 40 years of experience accessible to a broad audience of readers Contains a uniting theme that successful asset management requires the separation of application and implementation details

• • Learn the 'whys and hows' of digital system design with FPGAs from this thorough treatment. • Up-to-date information and comparison of different modern FPGA devices. • IEEE Fellow Wayne Wolf brings all related aspects of VLSI to FPGA system design in this thorough introduction.

A Comprehensive Tutorial

**Capturing Connectivity and Causality in Complex Industrial Processes**
**OntoCAPE**
**OAuth**
**Marine Engineers Review**
**Results of the IMPROVE Project**

This brief reviews concepts of inter-relationship in modern industrial processes, biological and social systems. Specifically ideas of connectivity and causality within and between elements of a complex system are treated; these ideas are of great importance in analysing and influencing mechanisms, structural properties and their dynamic behaviour, especially for fault diagnosis and hazard analysis. Fault detection and isolation for industrial processes being concerned with root causes and fault propagation, the brief shows that, process connectivity and causality information can be captured in two ways: · from process knowledge: structural modeling based on first-principles structural models can be merged with adjacency/reachability matrices or topology models obtained from process flow-sheets described in standard formats; and · from process data: cross-correlation analysis, Granger causality and its extensions, frequency domain methods, information-theoretical methods, and Bayesian networks can be used to identify pair-wise relationships and network topology. These methods rely on the notion of information fusion whereby process operating data is combined with qualitative process knowledge, to give a holistic picture of the system.

Maximize the impact and precision of your message! Now in its fourth edition, the Microsoft Manual of Style provides essential guidance to content creators, journalists, technical writers, editors, and everyone else who writes about computer technology. Direct from the Editorial Style Board at Microsoft—you get a comprehensive glossary of both general technology terms and those specific to Microsoft; clear, concise usage and style guidelines with helpful examples and alternatives; guidance on grammar, tone, and voice; and best practices for writing content for the web, optimizing for accessibility, and communicating to a worldwide audience. Fully updated and optimized for ease of use, the Microsoft Manual of Style is designed to help you communicate clearly, consistently, and accurately about technical topics—across a range of audiences and media.

This book offers an introduction to web-API security with OAuth 2.0 and OpenID Connect. In less than 50 pages you will gain an overview of the capabilities of OAuth. You will learn the core concepts of OAuth. You will get to know all four OAuth flows that are used in cloud solutions and mobile apps. If you have tried to read the official OAuth specification, you may get the impression that OAuth is complex. This book explains OAuth in simple terms. The different OAuth flows are visualized graphically using sequence diagrams. The diagrams allow you to see the big picture of the various OAuth interactions. This high-level overview is complemented with rich set of example requests and responses and an explanation of the technical details. In the book the challenges and benefits of OAuth are presented, followed by an explanation of the technical concepts of OAuth. The technical concepts include the actors, endpoints, tokens and the four OAuth flows. Each flow is described in detail, including the use cases for each flow. Extensions of OAuth are presented, such as OpenID Connect and the SAML2 Bearer Profile. Who should read this book? You do not have the time to read long books? This book provides an overview, the core concepts, without getting lost in the small-small details. This book provides all the necessary information to get started with OAuth in less than 50 pages. You believe OAuth is complicated? OAuth may seem complex with flows and redirects going back and forth. This book will give

you clarity by introducing the seemingly complicated material by many illustrations. These illustrations clearly show all the involved interaction parties and the messages they exchange. You want to learn the OAuth concepts efficiently? This book uses many illustrations and sequence diagrams. A good diagram says more than 1000 words. You want to learn the difference between OAuth and OpenID Connect? You wonder when the two concepts are used, what they have in common and what is different between them. This book will help you answer this question. You want to use OAuth in your mobile app? If you want to access resources that are protected by OAuth, you need to get a token first, before you can access the resource. For this, you need to understand the OAuth flows and the dependencies between the steps of the flows. You want to use OAuth to protect your APIs? OAuth is perfectly suited to protect your APIs. You can learn which OAuth endpoints need to be provided and which checks need to be made within the protected APIs.

SQL Injection Attacks and Defense

Autodesk Architectural Desktop 2006

Design of Pulse Oximeters

Introduction to SmartPlant (R) P&ID

The Piping Guide

Conference Proceedings, October 1-4, 1984, Anaheim, California

What is bad data? Some people consider it a technical phenomenon, like missing values or malformed records, but bad data includes a lot more. In this handbook, data expert Q. Ethan McCallum has gathered 19 colleagues from every corner of the data arena to reveal how they've recovered from nasty data problems. From cranky storage to poor representation to misguided policy, there are many paths to bad data. Bottom line? Bad data is data that gets in the way. This book explains effective ways to get around it. Among the many topics covered, you'll discover how to: Test drive your data to see if it's ready for analysis Work spreadsheet data into a usable form Handle encoding problems that lurk in text data Develop a successful web-scraping effort Use NLP tools to reveal the real sentiment of online reviews Address cloud computing issues that can impact your analysis effort Avoid policies that create data analysis roadblocks Take a systematic approach to data quality analysis

The Engineer's Guide to Plant Layout and Piping Design for the Oil and Gas Industries gives pipeline engineers and plant managers a critical real-world reference to design, manage, and implement safe and effective plants and piping systems for today's operations. This book fills a training void with complete and practical understanding of the requirements and procedures for producing a safe, economical, operable and maintainable process facility. Easy to understand for the novice, this guide includes critical standards, newer designs, practical checklists and rules of thumb. Due to a lack of structured training in academic and technical institutions, engineers and pipe designers today may understand various computer software programs but lack the fundamental understanding and implementation of how to lay out process plants and run piping correctly in the oil and gas industry. Starting with basic terms, codes and basis for selection, the book focuses on each piece of equipment, such as pumps, towers, underground piping, pipe sizes and supports, then goes on to cover piping stress analysis and the daily needed calculations to use on the job. Delivers a practical guide to pipe supports, structures and hangers available in one go-to source Includes information on stress analysis basics, quick checks, pipe sizing and pressure drop Ensures compliance with the latest piping and plant layout codes and complies with worldwide risk management legislation and HSE Focuses on each piece of equipment, such as pumps, towers, underground piping, pipe sizes and supports Covers piping stress analysis and the daily needed calculations to use on the job

Unlike many AutoCAD competitors, this book covers only the basics and uses "mixed units"-inches, meters, feet, kilometers, etc., to illustrate the

myriad drawing and editing tools for this popular application. Use the DVD to set up drawing exercises and projects, see all of the book's figures in color, and draw with a trial version of AutoCAD 2012. AutoCAD 2012 Beginning and Intermediate includes 50 exercises or "mini-workshops," that complete small projects from concept through actual plotting. Solving all of the workshops will simulate the creation of two full projects (architectural and mechanical) from beginning to end, without overlooking any of the basic commands and functions in AutoCAD 2012.
Wood Pole Structures for Electrical Transmission Lines
Securing SCADA Systems
Rock Slope Mapping and Assessment
Selected Contributions from PAIC 2017
Autocad 2012 Beginning and Intermediate
Practical Aspects of Chemical Engineering

**From development of the initial requirements to final drawings used in construction, this authoritative reference for the design and drafting of industrial piping systems provides a step-by-step guide to piping design. Created as an in-depth resource for professionals, this piping bible is as valuable in the field as it is in the office or the classroom. Among the topics covered in this encyclopedic survey are techniques of piping design, the assembly of piping from components, processes for connecting piping to equipment, office organization, methods to translate concepts into finished designs, and terms and abbreviations concerned. An expansive selection of charts and tables presents a wide array of information—frequently used data; factors for establishing pipeways width; spacing between pipes with and without flanges and for "jumpovers" and "runarounds;" principal dimensions and weights for key components; conversion for customary and metric units; direct-reading metric conversion tables for dimensions and data; and a metric supplement with principal dimensional data in millimeters—handily organized for quick reference.**

**Released August 2018 Download Kindle eBook FREE when you buy this book for a limited time only. The Defense Acquisition Regulations System (DARS) develops and maintains acquisition rules and guidance to facilitate the acquisition workforce as they acquire the goods and services DoD requires to ensure America's warfighters continued worldwide success. This is Volume 1 of 3. Volume 1: SUBPART 201.1 to 225.7902-5 Volume 2: SUBPART 226.1 to 252.216-7004 Volume 3: SUBPART 252.216-7005 to end Why buy a book you can download for free? We print this book so you don't have to. First you gotta find a good clean (legible) copy and make sure it's the latest version (not always easy). Some documents found on the web are missing some pages or the image quality is so poor, they are difficult to read. We look over each document carefully and replace poor**

quality images by going back to the original source document. We proof each document to make sure it's all there - including all changes. If you find a good copy, you could print it using a network printer you share with 100 other people (typically its either out of paper or toner). If it's just a 10-page document, no problem, but if it's 250-pages, you will need to punch 3 holes in all those pages and put it in a 3-ring binder. Takes at least an hour. It's much more cost-effective to just order the latest version from Amazon.com This book includes original commentary which is copyright material. Note that government documents are in the public domain. We print these large documents as a service so you don't have to. The books are compact, tightly-bound, full-size (8 1?2 by 11 inches), with large text and glossy covers. 4th Watch Publishing Co. is a SDVOSB. www.usgovpub.com If you like the service we provide, please leave positive review on Amazon.com.

"LiDAR (Light Detection and Ranging), also often referred to as '3D laser scanning', is an emerging three-dimensional mapping technology that employs a laser and a rotating mirror or housing to rapidly scan and image volumes and surficial areas such as rock slopes and outcrops, buildings, bridges and other natural and man-made objects. Ground-based or terrestrial LiDAR refers to tripod-based measurements, as opposed to airborne LiDAR measurements made from airplanes or helicopters. The purpose of this report was to determine whether the new technology of ground-based LiDAR could assist FHWA with highway rock slope stability. This report includes discussions of currently available LiDAR hardware and software, the current state of LiDAR for highway geotechnical applications (rock mass characterization, rockfall characterization, as-built 3D measurements), best-practices for field scanning and for point cloud data processing, and expected trends in the industry in the near future."--Technical report documentation page.

Digital Fabricators
Engineering Mechanics
Conference Proceedings, November 9-12, 1981, Detroit, Michigan
Department for Communities and Local Government

The failure of the FiReControl project

An Applied Guide to Process and Plant Design, 2nd edition, is a guide to process plant design for both students and professional engineers. The book covers plant layout and the use of spreadsheet programs and key drawings produced by professional engineers as aids to design; subjects that are usually learned on the job rather than in education. You will learn how to produce

smarter plant design through the use of computer tools, including Excel and AutoCAD, " What If Analysis, statistical tools, and Visual Basic for more complex problems. The book also includes a wealth of selection tables, covering the key aspects of professional plant design which engineering students and early-career engineers tend to find most challenging. Professor Moran draws on over 20 years' experience in process design to create an essential foundational book ideal for those who are new to process design, compliant with both professional practice and the IChemE degree accreditation guidelines. Includes new and expanded content, including illustrative case studies and practical examples Explains how to deliver a process design that meets both business and safety criteria Covers plant layout and the use of spreadsheet programs and key drawings as aids to design Includes a comprehensive set of selection tables, covering aspects of professional plant design which early-career designers find most challenging

Process Plant Layout, Second Edition, explains the methodologies used by professional designers to layout process equipment and pipework, plots, plants, sites, and their corresponding environmental features in a safe, economical way. It is supported with tables of separation distances, rules of thumb, and codes of practice and standards. The book includes more than seventy-five case studies on what can go wrong when layout is not properly considered. Sean Moran has thoroughly rewritten and re-illustrated this book to reflect advances in technology and best practices, for example, changes in how designers balance layout density with cost, operability, and safety considerations. The content covers the 'why' underlying process design company guidelines, providing a firm foundation for career growth for process design engineers. It is ideal for process plant designers in contracting, consultancy, and for operating companies at all stages of their careers, and is also of importance for operations and maintenance staff involved with a new build, guiding them through plot plan reviews. Based on interviews with over 200 professional process plant designers Explains multiple plant layout methodologies used by professional process engineers, piping engineers, and process architects Includes advice on how to choose and use the latest CAD tools for plant layout Ensures that all methodologies integrate to comply with worldwide risk management legislation

Written from the perspective of a practicing architect, Autodesk Architectural Desktop 2006: A Comprehensive Tutorial is a self-paced text that introduces students to the interface, commands, and features of the Autodesk Architectural Desktop 2006 drawing program. Organized to develop skills incrementally, this text contains numerous walk-throughs, step-by-step illustrations and over 150 hands-on exercises that acquaint users with the robust features and functions of this program. Using the author's knowledge of architecture, education and the Autodesk Architectural Desktop program, this text gives students an opportunity to learn how to operate the program, improve their own productivity and apply their skills to a commercial design problem

Microsoft Manual of Style

Process Plant Layout

Getting Started in Web-API Security

Cleaning Up The Data So You Can Get Back To Work

BIM for Landscape

Procurement Engineering and Supply Chain Guidelines in Support of Operation and Maintenance of Nuclear Facilities

This book explores the revolutionary potential of three-dimensional modeling and automated fabrication to inform the built environment. The emphasis is on experiential and tactile architecture.

The use of control systems is necessary for safe and optimal operation of industrial processes in the presence of inevitable disturbances and uncertainties. Plant-wide control (PWC) involves the systems and strategies required to control an entire chemical plant consisting of many interacting unit operations. Over the past 30 years, many tools and methodologies have been developed to accommodate increasingly larger and more complex plants. This book provides a state-of-the-art of techniques for the design and evaluation of PWC systems. Various applications taken from chemical, petrochemical, biofuels and mineral processing industries are used to illustrate the use of these approaches. This book contains 20 chapters organized in the following sections: Overview and Industrial Perspective Tools and Heuristics Methodologies Applications Emerging Topics With contributions from the leading researchers and industrial practitioners on PWC design, this book is key reading for researchers, postgraduate students, and process control engineers interested in PWC.

Build on your existing programming skills and upskill to professional-level C# programming. Summary In Code Like A Pro in C# you will learn: Unit testing and test-driven development Refactor a legacy .NET codebase Principles of clean code Essential backend architecture skills Query and manipulate databases with LINQ and Entity Framework Core Critical business applications worldwide are written in the versatile C# language and the powerful .NET platform, running on desktops, cloud systems, and Windows or Linux servers. Code Like a Pro in C# makes it easy to turn your existing abilities in C# or another OO language (such as Java) into practical C# mastery. There's no "Hello World" or Computer Science 101 basics—you'll learn by refactoring an out-of-date legacy codebase, using new techniques, tools, and best practices to bring it up to modern C# standards. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology You know the basics, now get ready for the next step! Pro-quality C# code is efficient, clean, and fast. Whether you're building user-facing business applications or writing data-intensive backend services, the experience-based, practical techniques in this book will take your C# skills to a new level. About the book Code Like a Pro in C# teaches you to how write clean C# code that's suitable for enterprise applications. In this book, you'll refactor a legacy codebase by applying modern C# techniques. You'll explore tools like Entity Framework Core, design techniques like dependency injection, and key practices like testing and clean coding. It's a perfect path to upgrade your existing C# skills or shift from another OO language into C# and the .NET ecosystem.

What's inside Unit testing and test-driven development Refactor a legacy .NET codebase Principles of clean code Query and manipulate databases with LINQ and Entity Framework Core About the reader For developers experienced with object-oriented programming. No C# experience required. About the author Jort Rodenburg is a software engineer who has taught numerous courses on getting up to speed with C# and .NET. Table of Contents PART 1 USING C# AND .NET 1 Introducing C# and .NET 2 .NET and how it compiles PART 2 THE EXISTING CODEBASE 3 How bad is this code? 4 Manage your unmanaged resources! PART 3 THE DATABASE ACCESS LAYER 5 Setting up a project and database with Entity Framework Core PART 4 THE REPOSITORY LAYER 6 Test-driven development and dependency injection 7 Comparing objects 8 Stubbing, generics, and coupling 9 Extension methods, streams, and abstract classes PART 5 THE SERVICE LAYER 10 Reflection and mocks 11 Runtime type checking revisited and error handling 12 Using IAsyncEnumerable and yield return PART 6 THE CONTROLLER LAYER 13 Middleware, HTTP routing, and HTTP responses 14 JSON serialization/deserialization and custom model binding

Ground-based LiDAR