Aerospace Industry Solutions

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Current Industrial Reports Springer

Over the next twenty years, the role and contributions of successfully managed projects will continue to grow in importance to aerospace organizations, especially considering the demands of emerging markets. The accompanying challenges will be how to effectively reduce product and process cost where known (incremental) and unknown (transformational) technological innovation is required. Managing Aerospace Projects brings together ten seminal SAE technical papers that support the vision of a more holistic and integrated approach to highly complex projects. Using the concept of project management levers, Dr. Jimmy Williams, Jr., the editor of this title, expands on the critical importance of correctly deciding on •Organizational strategies •Technology and product strategy •Global portfolio strategy •Project portfolio strategy Sub-optimized strategies result in and contribute to a portfolio of misdirected projects and organizational dissatisfaction with project management outcomes unrelated to the actual project management process. As an example, ensuring the convergence and readiness of technologies that are critical for the design, development, and assembly of aircraft requires a disciplined and flexible approach for product and technology development. Operating in an environment in which customer needs and supplier capabilities are dynamic requires continual focus on a portfolio of projects, initiatives, and capabilities that result in sustaining competitive advantage and influence. Managing Aerospace Projects stresses the positive impact of project classification and the specific handling and leadership knowledge requirements so that these endeavors are indeed successful. Some comparisons and lessons from the automotive industry are offered. The notion that project management competence and capabilities are embedded in distinct ways of coordinating and combining multiple competencies suggests that failing to recognize the required organizational adaptations could be a major contributor to sub-optimized project management outcomes.

Design and Analysis of Composite Structures Lulu.com

Nineteen chapters detail the role of knowledge in technical innovation at the individual, organizational, national, and international levels of the large commercial aircraft (LCA) aerospace community, how U.S. public policy shapes the external environment of that community, and the influence of the community's actors on technological practice. Scholars from disciplines such as business and strategic management, communications, economics, international political economy, library and information science, organizational science and learning theory, political science, public policy, and sociology treat topics such as: the growth of LCA manufacturing, U.S. research and development funding, engineers' information production and use behaviors, the relationship between technical uncertainty and information use, the use of computer networks, and a number of chapters on the structural behavior of engineers' communication and information use. Annotation copyrighted by Book News, Inc., Portland, OR

Sustainable Aviation Technology and Operations John Wiley & Sons

This book reports a comprehensive study on the Industry 4.0 technologies focused on the aerospace sector, presenting a blueprint of the sector and the background of the key technologies. The author describes the adoption of some of these technologies by some of the major aerospace companies and organizations.

Enabling Automation of Composite Manufacturing through the Use of Off-The-Shelf Solutions IGI Global

Additive Manufacturing for the Aerospace Industry explores the design, processing, metallurgy and applications of additive manufacturing (AM) within the aerospace industry. The book's editors have assembled an international team of experts who discuss recent developments and the future prospects of additive manufacturing. The work includes a review of the advantages of AM over conventionally subtractive fabrication, including cost considerations. Microstructures and mechanical properties are

also presented, along with examples of components fabricated by AM. Readers will find information on a broad range of materials and processes used in additive manufacturing. It is ideal reading for those in academia, government labs, component fabricators, and research institutes, but will also appeal to all sectors of the aerospace industry. Provides information on a broad range of materials and processes used in additive manufacturing Presents recent developments in the design and applications of additive manufacturing specific to the aerospace industry Covers a wide array of materials for use in the additive manufacturing of aerospace parts Discusses current standards in the area of aerospace AM parts

New Production Technologies in Aerospace Industry CRC Press

Now covering both conventional and unmanned systems, this is a significant update of the definitive book on aircraft system design Design and Development of Aircraft Systems, Second Edition is for people who want to understand how industry develops the customer requirement into a fully integrated, tested, and qualified product that is safe to fly and fit for purpose. This edition has been updated to take into account the growth of unmanned air vehicles, together with updates to all chapters to bring them in line with current design practice and technologies as taught on courses at BAE Systems and Cranfield, Bristol and Loughborough universities in the UK. Design and Development of Aircraft Systems, Second Edition Provides a holistic view of aircraft system design describing the interaction between all of the subsystems such as fuel system, navigation, flight control etc. Covers all aspects of design including systems engineering, design drivers, systems architectures, systems integration, modelling of systems, practical considerations, & systems examples. Incorporates essential new material on Unmanned Aircraft Systems (UAS). Design and Development of Aircraft Systems, Second Edition has been written to be generic and not to describe any single process. It aims to complement other volumes in the Wiley Aerospace Series, in particular Aircraft Systems, Third Edition and Civil Avionics Systems by the same authors, and will inform readers of the work that is carried out by engineers in the aerospace industry to produce innovative and challenging – yet safe and reliable – systems and aircraft. Essential reading for Aerospace Engineers.

The Business of Aerospace John Wiley & Sons

Composite materials offer an appealing combination of low weight and high strength that is especially sought after in high-performance applications. The use of composite materials has and is continuing to increase, and the use of the material has been shown to provide substantial weight savings in for example aircraft design. With an increased use of composite materials follows an increased demand for cost-efficient manufacturing methods. Composite products are in many cases manufactured either by manual operations or by the use of complex automated solutions associated with high investment costs. The objective for this research is to explore an approach to develop automated composite manufacturing based on commercially available off-the-shelf solutions as an alternative to the existing automated solutions for composite manufacturing. The research, which was carried out in collaboration with industrial partners within the aerospace sector, is based on a demonstrator-centered research approach. Three conceptual demonstrators, focusing on three different manufacturing methods and a number of physical demonstrators, are used to show that off-the-shelf solutions can be used for automated manufacturing of composite products. Two aspects that affect if it is possible to use off-the-shelf solutions for automated composite manufacturing are the rigorous quality standards used by the aerospace industry and the great variety in product properties and material properties that is associated with composite manufacturing. The advantages in using off-the-shelf solutions has shown to be that the solutions generally are associated with low investments and that published information about the solutions, and the solutions themselves, is generally available for evaluation and testing. When working with the demonstrators it has been shown to be useful to break down a manufacturing system into basic tasks and consider off-the-shelf solutions for each particular task. This approach facilitates the search for a suitable off-the-shelf solution to solve a particular task. However, each of the separate tasks can affect other areas of the manufacturing system, and an overall systems perspective is required to find solutions that are compatible with the entire manufacturing system.

Knowledge Diffusion in the U.S. Aerospace Industry [2 Volumes] Praeger

In Investment Strategy for Product Development in the Aerospace Industry, Frank A. Tillman and Deandra T. Cassone introduce a complete process for developing an investment strategy for the Air Force Material Command that develops products for the military aerospace industry. The Air Force has used Tillman and Cassone ' s model to help establish goals and objectives, relate them to decision criteria, and use them to analytically prioritize programs and allocate resources. Their model is interesting both for the specific problem it solves and for the example it offers: a model of a diverse set of projects that requires clearly defined goals, objectives, and metrics which can be compared on an " apples-to-apples " basis. It also shows how to capture and integrate the sometimes-differing viewpoints of multiple decision makers in a consistent process that ensures the greatest possible objectivity. The investment strategy outlined here offers a foundation any large organization can use to establish automated structured project prioritization and resource allocation processes for traceable and defensible decision making. It also presents steps and reports that can be used to develop an automated system for efficiently repeating the investment decision-making process in the future.

Collaborative Product and Service Life Cycle Management for a Sustainable World FT Press

"The Business of Aerospace is a compilation of many of Antoine G é lain's writings for Aviation Week & Space Technology published throughout the last decade. Organized by themes and complemented by brief commentaries introducing underlying business concepts or additional information, these reader-friendly columns are personal viewpoints that bring a fresh and insightful perspective on the aerospace industry. They draw on the author's unique combination of functional expertise (studying and advising on corporate strategy) and industry expertise (working in and with the aerospace industry). Collectively, they cover a broad enough range of issues to provide a comprehensive, 360-degree view of the key themes relevant to the business of aerospace today"--

Virtual Reality Technologies in the Aerospace Industry Springer Nature
This contributed volume contains the research results presented at the 4th Machining Innovations Conference, Hannover, September 2013. The topic of the conference are new production technologies in aerospace industry and the focus is on energy efficient machine tools as well as sustainable process planning. The target audience primarily comprises researchers and experts in the field but the book may also be beneficial for graduate students.

The Organization and Use of Library and Information Services in the Aerospace Industry, with Particular Emphasis on the United Kingdom Springer Nature
The increasing consolidation of the defense aerospace industry, brought about by post-Cold War reductions in defense authorizations, has led to the proliferation of cross-border relationships between U.S. and European firms. This report examines aerospace industry globalization trends with a view toward determining how the U.S. Air Force can best exploit such trends while minimizing their risks. It concludes that further research must be done to ascertain how the advantages of globalization, such as increased competition and interoperability, can best be achieved without compromising security concerns.

The Structure and Performance of the Aerospace Industry Elsevier
Manufacturing processes for aircraft components include broad activities consisting of multiple materials processing technologies. This book focuses on presenting manufacturing process technologies exclusively for fabricating major aircraft components. Topics covered in a total of twenty chapters are presented with a balanced perspective on the relevant fundamentals and various examples and case studies. An individual chapter is aimed at discussing the scope and direction of research and development in producing high strength lighter aircraft materials, and cost effective manufacturing processes are also included.

Additive Manufacturing for the Aerospace Industry Linköping University Electronic Press
The report treats the possibility that the aerospace industry could apply its capabilities to the solution of large-scale public problems, thus offsetting any significant reductions in the military budget. It includes discussion of what this action would imply in relation to the transferability of industry scientists and engineers. Studies performed by four aerospace contractors for the State of California are used as case examples of the industry's attempt to transfer some of its R and D skills to civilian and public projects. Conclusions are reached that (1) as indicators of the transferability of industry scientists and engineers, the four California studies are inconclusive; (2) the largest group of scientists and engineers in the industry, those engaged in design and development, may well be the least transferable; and (3) civilian-public projects are unlikely to become in the next 5 years or so a significant part of the industry's business. (Author).

Handbook of Research on Artificial Intelligence Applications in the Aviation and Aerospace Industries SAE International
Sustainable Aviation Technology and Operations Comprehensively covers research and development initiatives to enhance the environmental sustainability of the??aviation sector Sustainable Aviation Technology and Operations provides a comprehensive and timely outlook of recent research advances in aeronautics and air transport, with emphasis on both long-term sustainable development goals and current achievements. This book discusses some of the most promising advances in aircraft technologies, air traffic management and systems engineering methodologies for sustainable aviation. The topics covered include: propulsion, aerodynamics, avionics, structures, materials, airspace management, biofuels and sustainable lifecycle management. The physical processes associated with various aircraft emissions — including air pollutants, noise and contrails — are presented to support the development of computational models for aircraft design, flight path optimization and environmental impact assessment. Relevant advances in systems engineering and lifecycle management processes are also covered, bridging some of the existing gaps between academic research and industry best practices. A collection of research case studies complements the book, highlighting opportunities for a timely uptake of the most promising technologies, towards a more efficient and environmentally sustainable aviation future. Key features: Contains important research and industry relevant contributions from world-class experts. Addresses recent advances in aviation sustainability including multidisciplinary design approaches and multi-objective operational optimisation methods. Includes a number of research case studies, addressing propulsion, aerostructures, alternative aviation fuels, avionics, air traffic management, and sustainable lifecycle management solutions. Sustainable Aviation Technology and Operations is an excellent book for aerospace engineers, aviation scientists, researchers and graduate students involved in the field.

Design and Development of Aircraft Systems CRC Press
Describes one of Britain's most important industries, from the early pioneers in aeronautics to recent technological achievements. The book outlines the role of leading aerospace companies, and details the range of aeronautical equipment manufactured in Britain.

Philippine Statistical Development Program, 1999-2004 Springer Science & Business Media
With the emergence of smart technology and automated systems in today ' s world, artificial intelligence (AI) is being incorporated into an array of professions. The aviation and aerospace industry, specifically, is a field that has seen the successful implementation of early stages of automation in daily flight operations through flight management systems and autopilot. However, the effectiveness of aviation systems and the provision of flight safety still depend primarily upon the reliability of aviation specialists and human decision making. The Handbook of Research on Artificial Intelligence Applications in the Aviation and Aerospace Industries is a pivotal reference source that explores best practices for AI implementation in aviation to enhance security and the ability to learn, improve, and predict. While highlighting topics such as computer-aided design, automated systems, and human factors, this publication explores the enhancement of global aviation security as well as the methods of modern information systems in the aeronautics industry. This book is ideally

designed for pilots, scientists, engineers, aviation operators, air crash investigators, teachers, academicians, researchers, and students seeking current research on the application of AI in the field of aviation.

Going Global? John Wiley & Sons

The events occurred in the last years have shown how the threat related to both intentional and natural disasters could bring the civil and the military worlds closer in the conceivement and deployment of countermeasures as well as in the identification of effective strategies for enhancing the Planet safety and security. In this frame, the concept of dual use ? the set of technologies and applications that can be exploited for both civil and military purposes - becomes a key-topic. In addition, the aerospace is a strategic building block in the deployment of a network centric environment that aims at the global protection of the mankind. Aerospace is also a natural environment for dual use: many of the related enabling technologies have been first developed for the military world and then applied to civil ? including commercial - purposes.On September 12-14, 2007 an International Symposium has been held in Roma, Italy, joining the dual use approach with the aerospace technology: the international community has been gathered around the key-topic: aerospace technologies and applications for dual use. The event has called experts and operators from the military and civil community, belonging to industry, scientific and governmental institutions. The common aim was an effective convergence between the available and perspected technologies for the civil and military worlds as well as the conceivement of applications that can take the maximum benefit from the dual approach, optimizing the available economic resources. The Symposium has included invited-only contributions and an industrial panel. The main results of the Symposium, derived from key-note speeches, invited lectures, panel discussions and conclusions have created the starting material to develop this Edited Book.

Knowledge Diffusion Springer

The International Symposium on Aircraft Technology, MRO, and Operations (ISATECH) is a multi-disciplinary symposium that presents research on current issues in the field of aerospace. The conference provides a platform offering insights on the latest trends in aircraft technology, maintenance, repair, overhaul, and operations that offer innovative solutions to the challenges facing the aviation industry. ISATECH allows researchers, scientists, engineers, practitioners, policymakers, and students to exchange information, present new technologies and developments, and discuss future direction, strategies and priorities.

Managing Aerospace Projects Greenwood Publishing Group

“ Collaborative Product and Service Life Cycle Management for a Sustainable World ” gathers together papers from the 15th ISPE International Conference on Concurrent Engineering (CE2008), to stimulate the new thinking that is so crucial to our sustained productivity enhancement and quality of life. It is already evident in this new century that the desire for sustainable development is increasingly driving the market to reach for new and innovative solutions that more effectively utilize the resources we have inherited from previous generations; with the obvious responsibility to future generations. Human productivity and progress can be positively engineered and managed in harmony with the provision and needs of our natural environment. One century on from the industrial revolution, this is now the time of the sustainable revolution; requiring holistic technological, process and people integrated solutions to sustained socio-economic enhancement.

Technology Transfer and Innovation Can Help Cities Identify Problems and Solutions, National Science Foundation, National Aeronautics and Space Administration Univ of California Press

The paper treats the possibility that the aerospace industry could apply its capabilities to the solution of civilian public problems. It examines the relation of the systems approach, as it has been utilized by the aerospace industry in the past, to its possible future use in civilian public areas. It includes a discussion of what an industry move into civilian public areas would imply in relation to the transferability of industry scientists and engineers. It is argued that, in most respects, the domestic issues which face the nation today stem not from the type of technological deficiencies which the aerospace industry has been so successful in overcoming in the past, but rather from an inability of the public and their selected representatives to agree on social and economic objectives. (Author).

Advances in Sustainable Aviation Springer Nature

2011 Updated Reprint. Updated Annually. US Aviation and Aerospace Industry Handbook Volume 1 BASIC TRENDS AND REGULATIONS