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HERRERA BREANNA

On Integrating Unmanned Aircraft Systems into the National Airspace System Springer
The Handbook of Unmanned Aerial Vehicles is a reference text for the academic and research communities, industry, manufacturers, users, practitioners, Federal Government, Federal and State Agencies, the private sector, as well as all organizations that are and will be using unmanned aircraft in a wide spectrum of applications. The Handbook covers all aspects of UAVs, from design to logistics and ethical issues. It is also targeting the young investigator, the future inventor and entrepreneur by providing an overview and detailed information of the state-of-the-art as well as useful new concepts that may lead to innovative research. The contents of the Handbook include material that addresses the needs and ‘know how’ of all of the above sectors targeting a very diverse audience. The Handbook offers a unique and comprehensive treatise of everything one needs to know about unmanned aircrafts, from conception to operation, from technologies to business activities, users, OEMs, reference sources, conferences, publications, professional societies, etc. It should serve as a Thesaurus, an indispensable part of the library for everyone involved in this area. For the first time, contributions by the world’s top experts from academia, industry, government and the private sector, are brought together to provide unique perspectives on the current state-of-the-art in UAV, as well as future directions. The Handbook is intended for the expert/practitioner who seeks specific technical/business information, for the technically-oriented scientists and engineers, but also for the novice who wants to learn more about the status of UAV and UAV-related technologies. The Handbook is arranged in a user-friendly format, divided into main parts referring to: UAV Design Principles; UAV Fundamentals; UAV Sensors and Sensing Strategies; UAV Propulsion; UAV Control; UAV Communication Issues; UAV Architectures; UAV Health Management Issues; UAV Modeling, Simulation, Estimation and Identification; MAVs and Bio-Inspired UAVs; UAV Mission and Path Planning; UAV Autonomy; UAV Sense, Detect and Avoid Systems; Networked UAVs and UAV Swarms; UAV Integration into the National Airspace; UAV-Human Interfaces and Decision Support Systems; Human Factors and Training; UAV Logistics Support; UAV Applications; Social and Ethical Implications; The Future of UAVs. Each part is written by internationally renowned authors who are authorities in their respective fields. The contents of the Handbook supports its unique character as a thorough and comprehensive reference book directed to a diverse audience of technologists, businesses, users and potential users, managers and decision makers, novices and experts, who seek a holistic volume of information that is not only a technical treatise but also a source for answers to several questions on UAV manufacturers, users, major players in UAV research, costs, training required and logistics issues.
Unmanned Systems Roadmap 2007-2032 (Color) Springer Nature
This book comprises the selected contributions from the 2nd World Congress on Condition Monitoring (WCCM 2019), held in Singapore in December 2019. The contents focus on digitalisation for condition monitoring with the emergence of the fourth industrial revolution (Industry 4.0) and the

Industrial Internet-of-Things (IIoT). The book covers latest research findings in the areas of condition monitoring, structural health monitoring, and non-destructive testing which are relevant for many sectors including aerospace, automotive, civil, oil and gas, marine, and manufacturing industries. Different monitoring systems and non-destructive testing methods are discussed to avoid failures, increase lifespans, and reduce maintenance costs of equipment and machinery. The broad scope of the contents will make this book interesting for academics and professionals working in the areas of non-destructive evaluation and condition monitoring.

The Law of Unmanned Aircraft Systems Springer Nature

В монографии в доступной для восприятия широкого читателя форме рассматриваются основные направления и сферы правового регулирования интеграционных процессов в современном мире на примере ведущих интеграционных правовых систем (правопорядков), существующих на глобальной арене и в различных регионах земного шара: на глобальной арене — право Всемирной торговой организации; на региональном уровне — право Европейского Союза, право Европейской ассоциации свободной торговли и Европейского экономического пространства, правовые достижения Северного сотрудничества (право Северного совета), право Западноафриканского экономического и валютного союза (включая правовой режим единой валюты «африканский франк»), право Североамериканской ассоциации свободной торговли (НАФТА), правовое регулирование международного регионализма и субрегионализма в Европейском Союзе и Совете Европы. Особое внимание уделяется ведущим региональным интеграционным правопорядкам на постсоветском пространстве — праву формируемого Евразийского союза и праву Союзного государства России и Беларуси. В отдельной главе анализируются основные тенденции и особенности правового регулирования военно-политической интеграции, в том числе между Россией и другими республиками бывшего СССР. Для бакалавров и магистрантов юридических вузов и факультетов, студентов факультетов международных отношений, работников органов государственной власти, внешнеэкономических и внешнеполитических организаций, аспирантов, преподавателей, а также для всех заинтересованных читателей.

Airworthiness Springer

Aerospace Law and Policy Series, Volume 11 In recent years, few industries have grown so prodigiously as that of unmanned aircraft systems (UAS) and, as a result, developments in national, regional, and international law and policy are being initiated and implemented. This new edition of the definitive survey and guide, first published in 2016, reflects the expansion of this sector and the importance placed on it by a diverse range of stakeholders, as well as the enlarged regulatory and policy landscape. In addition to updating many of the original chapters, the second edition covers new topics and moves away from a purely introductory book to a more detailed and critical compendium. Authorship has also been extended beyond the original scope of contributors, which originally centred around those affiliated with Leiden University's Institute of Air and Space Law, and now includes additional experts from all around the world, each of whom explores both already existing rules and proposals coming from national, regional and international levels. As well as broadened discussions on such fundamental legal issues as insurance, financing, liability, accidents investigation, privacy, cyber security, stakeholder organisations and industry standards, the second edition takes into account major recent developments in such areas as the following: applicability and relevance of international regulatory instruments; coming into force of the European Union UAS-related laws; evolution of different States' national law; public safety (e.g., design, production, operation and maintenance); development of unmanned traffic management systems; commercial operations, including urban air mobility (e.g., flying taxis, cargo delivery, high-altitude activities); and developments in defence and security (e.g., dual-use, counter-UAS industry to combat illegal use). As in the first edition, a representative cross section of national laws is included, covering twenty-one different jurisdictions. This fully updated edition not only synthesises and clarifies the complex body of international, regional and national UAS-related law, but also provides expert insight into trends and areas of concern for numerous stakeholders. Without a doubt, it will be of immeasurable value to lawyers, relevant governmental and non-governmental agencies, aviation law scholars, and strategic planners in the wider aviation and transport industries.

Combat Intelligence CRC Press

Unmanned aerial vehicles (UAVs) are an emerging technology with a large variety of commercial and military applications. In-flight icing occurs during flight in supercooled clouds or freezing precipitation and is a potential hazard to all aircraft. In-flight icing on UAVs imposes a major limitation on the operational envelope. This report describes the unsettled topics related to UAV icing. First, typical UAV applications and the general hazards of icing are described. Second, an overview of the special technical characteristics of icing on autonomous and unmanned aircraft is given. Third, the operational challenges for flight in icing conditions are discussed. Fourth, technologies for ice protection that mitigate the icing hazard are introduced. Fifth, the tools and methods required to understand UAV icing and to develop aircraft with cold-weather capabilities are presented. Finally, an assessment of the current and future regulations regarding icing on UAVs is provided. Icing is a key challenge that the UAV industry needs to address in order to unlock the full potential of this emerging technology. UAVs must be capable of safe and reliable operation in a wide range of weather conditions. This report outlines the most important challenges and gives short- and long-term recommendations on how to solve UAV icing issues. NOTE: SAE EDGE™ Research Reports are intended to identify and illuminate key issues in emerging, but still unsettled, technologies of interest to the mobility industry. The goal of SAE EDGE™ Research Reports is to stimulate discussion and work in the hope of promoting and speeding resolution of identified issues. SAE EDGE™ Research Reports are not intended to resolve the challenges they identify or close any topic to further scrutiny. Click here to access the full SAE EDGETM Research Report portfolio. https://doi.org/10.4271/EPR2020008

Smart Technologies SAE International

The aircraft landing gear system is relatively unique on board an aircraft—it is both structure and machine, supporting the aircraft on the ground, yet providing functions such as energy absorption during landing, retraction, steering, and braking. Advances in Aircraft Landing Gear is a collection of eleven hand-picked technical papers focusing on the significant advancements that have occurred in this field concerning numeric modeling, electric actuation, and composite materials. Additionally, papers discussing self-powered landing gear and more electrical overall aircraft architectures have been included. The content of Advances in Aircraft Landing Gear is divided into two sections: Analysis and Design Methods; and Electric Actuation, Control, and Taxi. For those looking for more information on aircraft landing gears, the SAE A-5 committee (the Aerospace Landing Gear Systems Committee), which meets twice a year, serves as a useful forum for discussion on landing gear issues and development. A current listing of documents produced and maintained by this committee appears in the appendix.

Unmanned Aircraft Systems Springer

All aspects of fuel products and systems including fuel handling, quantity gauging and management functions for both commercial (civil) and military applications. The fuel systems on board modern aircraft are multi-functional, fully integrated complex networks. They are designed to provide a proper and reliable management of fuel resources throughout all phases of operation, notwithstanding changes in altitude or speed, as well as to monitor system functionality and advise the flight crew of any operational anomalies that may develop. Collates together a wealth of information on fuel system design that is currently disseminated throughout the literature. Authored by leading industry experts from Airbus and Parker Aerospace. Includes chapters on basic system functions, features and functions unique to military aircraft, fuel handling, fuel quantity gauging and management, fuel systems safety and fuel systems design and development. Accompanied by a companion website housing a MATLAB/SIMULINK model of a modern aircraft fuel system that allows the user to set up flight conditions, investigate the effects of equipment failures and virtually fly preset missions. Aircraft Fuel Systems provides a timely and invaluable resource for engineers, project and programme managers in the equipment supply and application communities, as well as for graduate and postgraduate students of mechanical and aerospace engineering. It constitutes an invaluable addition to the established Wiley Aerospace Series.

Unmanned Aircraft Systems Giuffrè Editore

This book provides in-depth coverage of the latest research and development activities concerning innovative wind energy technologies intended to replace fossil fuels on an economical basis. A characteristic feature of the various conversion concepts discussed is the use of tethered flying devices to substantially reduce the material consumption per installed unit and to access wind energy at higher altitudes, where the wind is more consistent. The introductory chapter describes the emergence and economic dimension of airborne wind energy. Focusing on "Fundamentals, Modeling & Simulation", Part I includes six contributions that describe quasi-steady as well as dynamic models and simulations of airborne wind energy systems or individual components. Shifting the spotlight to "Control, Optimization & Flight State Measurement", Part II combines one chapter on measurement techniques with five chapters on control of kite and ground stations, and two chapters on optimization. Part III on "Concept Design & Analysis" includes three chapters that present and analyze novel harvesting concepts as well as two chapters on system component design. Part IV, which centers on "Implemented Concepts", presents five chapters on established system concepts and one chapter about a subsystem for automatic launching and landing of kites. In closing, Part V focuses with four chapters on "Technology Deployment" related to market and financing strategies, as well as on regulation and the environment. The book builds on the success of the first volume "Airborne Wind Energy" (Springer, 2013), and offers a self-contained reference guide for researchers, scientists, professionals and students. The respective chapters were contributed by a broad variety of authors: academics, practicing engineers and inventors, all of whom are experts in their respective fields.

Airborne Wind Energy Elsevier

This book contains the Proceedings of the International Conference on Robot Ethics, held in Lisbon on October 23 and 24, 2015. The conference provided a multidisciplinary forum for discussing central and evolving issues concerning safety and ethics that have arisen in various contexts where robotic technologies are being applied. The papers are intended to promote the formulation of more precise safety standards and ethical frameworks for the rapidly changing field of robotic applications. The conference was held at Pavilhão do Conhecimento/Ciência Viva in Lisbon and brought together leading researchers and industry representatives, promoting a dialogue that combines different perspectives and experiences to arrive at viable solutions for ethical problems in the context of robotics. The conference topics included but were not limited to emerging ethical, safety, legal and societal problems in the following domains: • Service/Social Robots: Robots performing tasks in human environments and involving close human-robot interactions in everyday households; robots for education and entertainment; and robots employed in elderly and other care applications • Mobile Robots: Self-driving vehicles, autonomous aircraft, trains, cars and drones • Robots used in medicine and for therapeutic purposes • Robots used in surveillance and military functions

Introduction to Unmanned Aircraft Systems Edizioni Nuova Cultura

Proceedings of the Tenth International Workshop on Structural Health Monitoring, September 1–3, 2015. Selected research on the entire spectrum of structural health techniques and areas of applicationAvailable in print, complete online text download or individual articles. Series book comprising two volumes provides selected international research on the entire spectrum of structural health monitoring techniques used to diagnose and safeguard aircraft, vehicles, buildings, civil infrastructure, ships and railroads, as well as their components such as joints, bondlines, coatings and more. Includes special sections on system design, signal processing, multifunctional materials, sensor distribution, embedded sensors for monitoring composites, reliability and applicability in extreme environments. The extensive contents can be viewed below.

On Integrating Unmanned Aircraft Systems into the National Airspace System LIT Verlag Münster

I velivoli a pilotaggio remoto – o più precisamente aeromobili a pilotaggio remoto (APR) – sia ad ala fissa che ad ala rotante, si rivelano sempre più un valido strumento a supporto di un ampio spettro di operazioni non-militari atte a garantire la sicurezza nazionale ed europea. In quest'ottica, il volume esamina la tematica dei velivoli a pilotaggio remoto da tre diverse angolazioni, offrendo un'analisi degli ipotetici scenari d'impiego in ambito civile/sicurezza, una disamina dei principali aspetti e delle potenziali vulnerabilità nel dominio cibernetico e, infine, alcune prospettive future in termini di mercato, sviluppo tecnologico e integrazione nello spazio aereo non segregato e in ambiente ATM. Dall'analisi emerge come a fronte dei potenziali vantaggi derivanti dall'utilizzo degli APR, permangono ancora diverse criticità che richiedono l'adozione e il perseguimento di un approccio armonico, coordinato e sinergico tra i numerosi stakeholder interessati, sia civili che militari. L'obiettivo è quello di garantire che il segmento degli APR cresca all'interno di un mercato unico dei velivoli a pilotaggio remoto, assicurando al tempo stesso il rispetto di adeguati standard di protezione e sicurezza per i cittadini europei.

Structural Health Monitoring 2015 CRC Press

UNMANNED AIRCRAF T SYSTEMS UNMANNED AIRCRAF T SYSTEMS An unmanned aircraft system (UAS), sometimes called a drone, is an aircraft

without a human pilot on board ??? instead, the UAS can be controlled by an operator station on the ground or may be autonomous in operation. UAS are capable of addressing a broad range of applications in diverse, complex environments. Traditionally employed in mainly military applications, recent regulatory changes around the world are leading to an explosion of interest and wide-ranging new applications for UAS in civil airspace. Covering the design, development, operation, and mission profiles of unmanned aircraft systems, this single, comprehensive volume forms a complete, stand-alone reference on the topic. The volume integrates with the online Wiley Encyclopedia of Aerospace Engineering, providing many new and updated articles for existing subscribers to that work. The chapters cover the following items: Airframe configurations and design (launch systems, power generation, propulsion) Operations (missions, integration issues, and airspace access) Coordination (multivehicle cooperation and human oversight) With contributions from leading experts, this volume is intended to be a valuable addition, and a useful resource, for aerospace manufacturers and suppliers, governmental and industrial aerospace research establishments, airline and aviation industries, university engineering and science departments, and industry analysts, consultants, and researchers.

Human Factors in Aviation and Aerospace CreateSpace

Unmanned Aircraft Systems delivers a much needed introduction to UAV System technology, taking an integrated approach that avoids compartmentalising the subject. Arranged in four sections, parts 1-3 examine the way in which various engineering disciplines affect the design, development and deployment of UAS. The fourth section assesses the future challenges and opportunities of UAS. Technological innovation and increasingly diverse applications are two key drivers of the rapid expansion of UAS technology. The global defence budget for UAS procurement is expanding, and in the future the market for civilian UAVs is expected to outmatch that of the military. Agriculture, meteorology, conservation and border control are just a few of the diverse areas in which UAVs are making a significant impact; the author addresses all of these applications, looking at the roles and technology behind both fixed wing and rotorcraft UAVs. Leading aeronautical consultant Reg Austin co-founded the Bristol International Remotely Piloted Vehicle (RPV) conferences in 1979, which are now the longest-established UAS conferences worldwide. In addition, Austin has over 40 years' experience in the design and development of UAS. One of Austin's programmes, the "Sprite UAV System" has been deployed around the world and operated by day and night, in all weathers.

Equipment, Systems, and Installations in Part 23 Airplanes SAE International

As the Department of Defense (DoD) develops and employs an increasingly sophisticated force of unmanned systems over the next 25 years (2007 to 2032), technologists, acquisition officials, and operational planners require a clear, coordinated plan for the evolution and transition of unmanned systems technology. With the publication of this document, individual roadmaps and master plans for UASs, UGVs, and UMSs (defined as Unmanned Undersea Vehicles (UUVs) and Unmanned Surface Vehicles (USVs)) have been incorporated into a comprehensive DoD Unmanned Systems Roadmap. This integrated Unmanned Systems Roadmap is the plan for future prioritization and funding of these systems development and technology, thus ensuring an effective return on the Department's investment. Its overarching goal, in accordance with the Strategic Planning Guidance (SPG), is to guide military departments and defense agencies toward logically and systematically migrating applicable mission capabilities to this new class of unmanned systems. These needs, listed below, should be considered when prioritizing future research, development, and procurement of unmanned systems technology to ensure an effective return on the Department's investment.

Structural Health Monitoring MDPI

Airworthiness, as a field, encompasses the technical and non-technical activities required to design, certify, produce, maintain, and safely operate an aircraft throughout its lifespan. The evolving technology, science, and engineering methods and, most importantly, aviation regulation, offer new opportunities and create, new challenges for the aviation industry. This book assembles review and research articles across a variety of topics in the field of airworthiness: aircraft maintenance, safety management, human factors, cost analysis, structures, risk assessment, unmanned aerial vehicles and regulations. This selection of papers informs the industry practitioners and researchers on important issues.

Anwender-Akzeptanz und Bewertung unbemannter Flugsysteme ("Drohnen") im Katastrophenschutz John Wiley & Sons

U.S. and allied combat operations continue to highlight the value of unmanned systems in the modern combat environment. Combatant Commanders (CCDRs) and warfighters value the inherent features of unmanned systems, especially their persistence, versatility, and reduced risk to human life. The U.S. military Services are fielding these systems in rapidly increasing numbers across all domains: air, ground, and maritime. Unmanned systems provide diverse capabilities to the joint commander to conduct operations across the range of military operations: environmental sensing and battlespace awareness; chemical, biological, radiological, and nuclear (CBRN) detection; counter-improvised explosive device (C-IED) capabilities; port security; precision targeting; and precision strike. Furthermore, the capabilities provided by these unmanned systems continue to expand.

I velivoli a pilotaggio remoto e la sicurezza europea DEStech Publications, Inc

Achieving Systems Safety contains papers presented at the twentieth annual Safety-critical Systems Symposium, held in Bristol, UK, in February 2012. The Symposium is for engineers, managers and academics in the field of system safety, across all industry sectors, so the papers making up this volume offer a wide-ranging coverage of current safety topics, and a blend of academic research and industrial experience. They include both recent developments in the field and discussion of open issues that will shape future progress. The topics covered by the 20 papers in this volume include vulnerabilities in global navigation satellite systems; safety culture and community; transport safety; cyber-attacks on safety-critical systems; improving our approach to systems safety; accidents; assessment, validation and testing; safety standards and safety levels. The book will be of interest to both academics and practitioners working in the safety-critical systems arena.

Achieving Systems Safety John Wiley & Sons

Commercial interest for unmanned aircraft systems (UAS) has seen a steady increase over the last decade. Nevertheless, UAS operations have remained almost exclusively military. This is mainly due to the lack of a regulatory framework that allows only limited public and civil UAS operations with usually crippling restrictions. Although efforts from the Federal Aviation Administration and its partners are already underway to integrate UAS in the National Airspace System (NAS), the appropriate regulation will not be ready for several more years. In the meantime UAS developers need to be aware of the current operational restrictions, as well as make informed decisions on their research and development efforts so that their designs will be airworthy when the regulatory framework is in place. This monograph aims to present an overview of current aviation regulation followed by an investigation of issues and factors that will affect future regulation.

Advances in Aircraft Landing Gear AIAA

RAND Corporation researchers assessed the impact that certain remotely piloted aircraft (RPA) governed by the Missile Technology Control Regime (MTCR) have on U.S. national security interests. In this report, they document their findings.

Sense and Avoid in UAS Springer Science & Business Media

This book comprises the selected contributions from the 2nd World Congress on Condition Monitoring (WCCM 2019), held in Singapore in December 2019. The contents focus on digitalisation for condition monitoring with the emergence of the fourth industrial revolution (Industry 4.0) and the Industrial Internet-of-Things (IIoT). The book covers latest research findings in the areas of condition monitoring, structural health monitoring, and non-destructive testing which are relevant for many sectors including aerospace, automotive, civil, oil and gas, marine, and manufacturing industries. Different monitoring systems and non-destructive testing methods are discussed to avoid failures, increase lifespans, and reduce maintenance costs of equipment and machinery. The broad scope of the contents will make this book interesting for academics and professionals working in the areas of non-destructive evaluation and condition monitoring.