Preface

In the last few decades, the use of Unmanned Aircraft Systems (UASs) has shifted from military to public and civil sectors. UASs were originally developed for military use, and in recent years, several applications for civilian purposes have emerged in the fields of agriculture, commerce, energy, environment, topography, industry, journalism, security, surveillance etc.

The increasing civilian use of UASs is not yet associated with a comprehensive regulatory framework, but new rules are emerging. Through this book, we intend to provide the reader with a broad examination of each area where concerns may emerge in the use of civil UASs. Indeed, the widespread use of UASs has led to several alarming concerns linked to the lack of authorisation and certification procedures in a significant number of States, as well as social acceptance (affected by privacy and data protection infringements), safety and security, liability and insurance issues.

In the first part of the book, we focus on both technical aviation regulation and public law (Chapter 1 to Chapter 11), while the remaining part focuses on privacy and data protection law including, again, the analysis of several public law implications (Chapter 12 to Chapter 14). The core of the first part is about considering UASs as a disruptive innovation from several different perspectives, as an innovation that brings aviation into the third Industrial Revolution (Chapter 2). The issues concerning social acceptance are examined by considering that UASs represent a democratic revolution due to the enormous extension of the customer base in comparison to traditional aviation with a pilot on-board the aircraft (Chapter 3). Then we look at the scope of international standardisation, as declared by the International Civil Aviation Organization (ICAO), which aims to provide the fundamental international regulatory framework for civil Remotely Piloted Aircraft System (RPAS) flying internationally through Standards and Recommended Practices (SARPs), taxonomy and emerging safety provisions for personnel including remote pilots, airworthiness, and operations in the certified category as well as in the open and specific categories (Chapter 4 to Chapter 9).

In the absence of a common shared liability regime and/or a common framework regarding international flight authorisation, we analyse the
possible legal solutions including the new Regulation No 1139 of the European Parliament and of the Council of 4 July 2018 on common rules on aviation safety (Chapter 10). Air transport is the most regulated sector for safety and security in view of its vulnerability, but these provisions have been construed, till now, only for civil aircraft whose pilot is on-board. For these reasons, we consider the applicability of the current security provisions for UASs (Chapter 11). On the side of private law, we scrutinise the current international and EU regulations applicable to operators' liability by means of a theoretical exercise in order to evaluate its applicability to UAS operators (Chapter 12), knowing that in the future, jurisprudence may contribute towards consolidating the approach.

With regard to insurance aspects, we consider the fears associated with the possibility of unmanned devices crashing or colliding with another aircraft, which enlarge the risks related to damage of goods carried by UASs (Chapter 13). Finally, we consider the concerns regarding privacy and data protection because of the advanced digital technologies with which UASs are equipped. The analysis of the privacy aspects focuses on applications of UASs, considering that they are capable of collecting data much more efficiently than satellites or manned aircraft (Chapter 14).

It is worth highlighting that since safety regulation is, on the one hand, rooted in legislation and, on the other hand, grounded in technical facts, our ambition is to take those readers not experienced in law to the legal universe and, at the same time, explain key technical facts to jurists, economists or other non-technical professionals. This type of analysis leads to a particular innovative approach, which is necessary to have a complete vision of the current debate on the legal, ethical, social and technical issues concerning UASs.

Obviously, this book takes into consideration all the latest legal and preparatory acts issued by organisations and institutions at international and European levels including the recent Regulation No 1139/2018. Needless to say, civil UASs are a topic under scrutiny by all concerned international bodies and in continuous evolution which we have tried our best to analyse and discuss. Finally, most of the documents to which

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we refer are mentioned together with the link to their website. For that reason, the book does not include annexes.

Even though the entire structure of the book, including Chapter 1, is a result of the authors’ common ideas and shared approach, Chapters 2, 4, 5, 6, 7, 8 and 9 are attributable to Filippo Tomasello, while Chapters 3, 10, 11, 12, 13 and 14 are attributable to Anna Masutti.

Any errors or inaccuracies are entirely the responsibility of the authors.

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