

THE SPACE LAW
REVIEW

FOURTH EDITION

Editor
Joanne Wheeler MBE

THE LAWREVIEWS

THE
SPACE LAW
REVIEW

FOURTH EDITION

Reproduced with permission from Law Business Research Ltd
This article was first published in Decemeber 2022
For further information please contact Nick.Barette@thelawreviews.co.uk

Editor
Joanne Wheeler MBE

THE LAWREVIEWS

PUBLISHER
Clare Bolton

HEAD OF BUSINESS DEVELOPMENT
Nick Barette

TEAM LEADER
Katie Hodgetts

SENIOR BUSINESS DEVELOPMENT MANAGER
Rebecca Mogridge

BUSINESS DEVELOPMENT MANAGER
Joey Kwok

BUSINESS DEVELOPMENT ASSOCIATE
Archie McEwan

RESEARCH LEAD
Kieran Hansen

EDITORIAL COORDINATOR
Leke Williams

PRODUCTION AND OPERATIONS DIRECTOR
Adam Myers

PRODUCTION EDITOR
Orla Cura

SUBEDITOR
Aida Bahrami

CHIEF EXECUTIVE OFFICER
Nick Brailey

Published in the United Kingdom
by Law Business Research Ltd
Holborn Gate, 330 High Holborn, London, WC1V 7QT, UK
© 2022 Law Business Research Ltd
www.TheLawReviews.co.uk

No photocopying: copyright licences do not apply.

The information provided in this publication is general and may not apply in a specific situation, nor does it necessarily represent the views of authors' firms or their clients. Legal advice should always be sought before taking any legal action based on the information provided. The publishers accept no responsibility for any acts or omissions contained herein. Although the information provided was accurate as at December 2022, be advised that this is a developing area.

Enquiries concerning reproduction should be sent to Law Business Research, at the address above.

Enquiries concerning editorial content should be directed
to the Publisher – clare.bolton@lbresearch.com

ISBN 978-1-80449-137-9

Printed in Great Britain by
Encompass Print Solutions, Derbyshire
Tel: 0844 2480 112

ACKNOWLEDGEMENTS

The publisher acknowledges and thanks the following for their assistance throughout the preparation of this book:

ALDEN LEGAL LIMITED

ARENDT & MEDERNACH

BIRD & BIRD

FASKEN MARTINEAU DUMOULIN LLP

FORMICHELLA & SRITAWAT ATTORNEYS AT LAW CO, LTD

GVW GRAF VON WESTPHALEN

HUDSON GAVIN MARTIN

INTERNATIONAL INSTITUTE OF AIR AND
SPACE LAW, LEIDEN UNIVERSITY

MILBANK LLP

MORI HAMADA & MATSUMOTO

PINHEIRO NETO ADVOGADOS

SLAUGHTER AND MAY

SORAINEN

VIEIRA DE ALMEIDA & ASSOCIADOS

ZHONG LUN LAW FIRM

CONTENTS

PREFACE.....	v
<i>Joanne Wheeler MBE</i>	
Chapter 1 INTERNATIONAL TREATIES	1
<i>Joanne Wheeler MBE</i>	
Chapter 2 INTERNATIONAL TELECOMMUNICATION UNION AND ACCESS TO SPECTRUM.....	13
<i>Joanne Wheeler MBE</i>	
Chapter 3 EUROPE.....	20
<i>Joanne Wheeler MBE</i>	
Chapter 4 TAXATION	29
<i>Tom Gilliver</i>	
Chapter 5 AUSTRALIA.....	33
<i>Thomas Jones, Matthew Bovaird and Dylan McGirr</i>	
Chapter 6 BRAZIL.....	52
<i>Francisco Werneck de Albuquerque Maranhão and Maria Eugenia de Araujo Vianna</i>	
Chapter 7 CANADA.....	67
<i>Leslie J Milton</i>	
Chapter 8 CHINA.....	77
<i>Peng Zhang</i>	
Chapter 9 ESTONIA	85
<i>Mihkel Miidla and Maarika Maripuu</i>	
Chapter 10 FRANCE.....	89
<i>Willy Mikalef</i>	

Chapter 11	GERMANY.....	99
	<i>Grace Nacimiento</i>	
Chapter 12	JAPAN.....	109
	<i>Hiroko Yotsumoto, Daiki Ishikawa and Tetsuji Odan</i>	
Chapter 13	LUXEMBOURG.....	121
	<i>Bob Calmes, Laurent Schummer and Błażej Gladysz-Lehmann</i>	
Chapter 14	NETHERLANDS.....	132
	<i>Tanja Masson-Zwaan</i>	
Chapter 15	NEW ZEALAND.....	143
	<i>Simon Martin and Roscoe Moore</i>	
Chapter 16	PORTUGAL.....	159
	<i>Magda Cocco, Helena Correia Mendonça and Cristina Melo Miranda</i>	
Chapter 17	THAILAND.....	172
	<i>John P Formichella, Naytiwut Jamallsawat and Onnicha Khongthon</i>	
Chapter 18	UNITED KINGDOM.....	179
	<i>Joanne Wheeler MBE</i>	
Chapter 19	UNITED STATES.....	194
	<i>Dara A Panahy</i>	
Appendix 1	ABOUT THE AUTHORS.....	205
Appendix 2	CONTRIBUTORS' CONTACT DETAILS.....	215

PREFACE

The space industry was busy in 2022.

The US National Aeronautics and Space Administration's Artemis spacecraft finally reached the Moon, laying the foundations for future lunar exploration. Artemis 1 transported many small lunar research spacecraft – including Japan's OMOTENASHI lunar lander – as secondary payloads. South Korea's first lunar orbiter Danuri was launched into space by a Falcon 9 rocket, one of which also launched the Hakuto-R Mission 1, a private Moon mission by Japanese company ispace.

The year 2022 has also been busy for space tourism. Blue Origin's New Shepard launched six passengers on a suborbital trajectory in three flights. SpaceX's Crew Dragon space capsule launch was the first American space tourist mission to the International Space Station. The crew on board the Axiom Space-operated mission included one professional astronaut and three tourists.

China finished the construction of the Tiangong space station with the addition of the Wentian and Mengtian lab modules. Both Wentian and Mengtian were successfully launched and docked to the space station.

Boeing launched the second unmanned test flight of its Starliner space capsule. The test flight was successful and will lead the way for Starliner's first crewed test flight in 2023.

We are also seeing predicted consolidation in the industry, including the proposed merger between Viasat and Inmarsat, and between OneWeb and Eutelsat.

What particularly stands out to me is the increased recognition in recent years, and especially in 2022, of the value of space for our life on Earth and the view that space is very much part of our terrestrial ecosystem. This reached the public agenda at the United Nations (UN) Climate Change Conference in 2021, more commonly referred to as COP26, and also in 2022 at COP27. The value of space applications for methane and carbon measurements, monitoring and verification, for example, were clearly evidenced. Linked to this is the increasing recognition of the urgent need to protect the Earth and space environment. The growth in commercial activities and orbital populations has a large impact on the sustainability of long-term space activities.

Some companies are actively seeking out licensing regimes and regulators with clear procedures and processes that comply with space debris mitigation standards and sustainability goals. Licensing regimes that recognise environmental, social and governance (ESG) objectives can assist companies with raising finance, offer a better insurance risk and can allow market access in other jurisdictions. In fact, the UN Environment Programme Finance Initiative recently stated that it is part of a company's fiduciary duty to integrate ESG issues into its investment analysis.

The ecosystem comprising international guidelines, national implementation and commercial ESG concerns linked to investment is a powerful one. The international community must:

- a* enable more states to access and use outer space; and
- b* allow more – and more innovative – commercial activities to safely and sustainably use the space domain, benefitting life on Earth.

States and private entities must accept greater responsibilities and the need to ensure that such activities in space are sustainable. Effective national regulation that enables innovation and encourages investment while meeting international obligations is an increasingly important source of competitive advantage globally. This is especially the case when such national regulation embraces sustainability goals in relation to the mitigation of space debris and the protection of the outer space environment.

There is a related need for recognised standards that will ensure the safe and sustainable use of space-based equipment and operations, thereby increasing confidence for all who wish to develop their businesses and uses of space, including investors and insurers. Those involved in uses of space for science and research share the need for such a framework. To aid this, in March 2022, the International Astronomical Union announced the establishment of the Centre for the Protection of the Dark and Quiet Sky from Satellite Constellation Interference to coordinate and aggregate measures to mitigate the effects of satellite constellations on astronomy. More on the need to ensure space sustainability can be found in the jurisdictional chapters of this edition.

I am very pleased to say that this fourth edition of *The Space Law Review* contains contributions from three new firms: Zhong Lun Law Firm in China; Sorainen in Estonia; and Milbank LLP in the United States. It has been a pleasure to engage with these new contributors.

My thanks go to all the authors, who have contributed their time, expertise and enthusiasm to this edition. Their practical knowledge of their respective legal and regulatory frameworks – and related challenges, risks and solutions – makes this book unique. The contributors' expertise will grow in importance as the value of the space domain and the extent of space applications is increasingly recognised by states, the space industry, other industries and international organisations.

I am grateful to the contributors of *The Space Law Review* and wish them success for the years ahead in the space domain. I hope that readers will find this edition valuable and recognise the benefits that the international space industry can offer our life on Earth.

Joanne Wheeler MBE

Alden Legal Limited

London

December 2022

PORTUGAL

Magda Cocco, Helena Correia Mendonça and Cristina Melo Miranda¹

I INTRODUCTION TO THE NATIONAL LEGAL, REGULATORY AND POLICY FRAMEWORK

Portugal has been taking important steps in the space sector in recent years. In addition to the approval of its space strategy in 2018 (Portugal Space 2030), Portugal also became part of the European Space Surveillance and Tracking programme (EU SST); launched the Atlantic International Research Centre (the AIR Centre); stated its intention to set up a spaceport in the Azores; and approved its own National Space Act and the Azores Regional Space Act. Moreover, Portugal reinforced its contribution to the European Space Agency (ESA), appointed a national space authority (the Space Authority) and set up a space agency (Portugal Space).

i Portugal Space 2030

Resolution of the Council of Ministers No. 30/2018 of 12 March 2018 approved Portugal Space 2030. Its strategic goals include:

- a* promoting economic growth and the creation of skilled employment through space-related markets;
- b* promoting the generation of satellite data through new space technologies and infrastructures;
- c* contributing to the development of Portugal and international scientific cooperation, taking into consideration the geostrategic positioning of Portugal; and
- d* guaranteeing the development and evolution of legal, financial, institutional, cultural and educational frameworks aimed at developing the space sector in Portugal.

The strategy contains three axes. The first relates to the exploration of space data and signals through space services and applications or as enabled by space technologies. The second axis relates to the development, construction and operation of space equipment, systems, infrastructures and services for space data generation, with an emphasis on mini-, micro- and nanosatellites. As part of the second axis, the development of a programme for access to space is mentioned. The third axis focuses on the development of national capability and skills in the space sector through scientific research, innovation, education and scientific culture.

¹ Magda Cocco is a partner, Helena Correia Mendonça is a principal consultant and Cristina Melo Miranda is a senior associate at Vieira de Almeida & Associados.

The development of a specialised consortium in the space sector in the form of a collaborative laboratory and continuing to promote the incubation of new companies in close cooperation with ESA (e.g., through the ESA Business Incubation Centre in Portugal) are also referred to.

The core institutional framework for space in Portugal comprises the Space Authority, which is tasked with supervising and licensing space activities, and Portugal Space. The Space Authority is, provisionally, the National Communications Authority, which is also the competent entity for the assignment of orbital slots and frequencies.

Following the increasing relevance of outer space in defence, Portugal has also created a working group for a Space Defence Programme (PRESDEF) under Order No. 3732/2020 of 26 March 2020, which was tasked with developing a proposal for a National Defence Strategy for Space, including an action plan for its implementation and its governance structure, and identifying the guidelines for the development of the PRESDEF.

It also created a committee for monitoring the PRESDEF under Order No. 1768/2021 of 17 February 2021, which is tasked with overseeing the execution of the implementation plan of the National Defence Strategy for Space, and with following up on the development of cooperative projects in the space domain, notably within the scope of the Permanent Structured Cooperation and the European Defence Fund.

The National Defence Strategy for Space 2020–2030 was presented in October 2021. It contains a set of strategic goals and axes, including the following:

- a* the development of capacities in the space domain;
- b* broadening access to space, and related technologies and services;
- c* promoting and integrating research, development and innovation in the space domain; and
- d* setting up a governance structure that articulates the national defence structures with Portugal Space and other relevant bodies.

It also highlights the role of defence in the development of the goals of Portugal Space 2030.

In addition, the autonomous region of the Azores presented its Space Strategy in November 2021. The Space Strategy aims to enhance national and European space goals, taking into consideration the specificities of the Azores region, notably its geostrategic location. A public consultation on the proposal for the Space Strategy was closed in March 2022.

ii Portugal Space

Portugal Space was set up in March 2019 under Resolution of the Council of Ministers No. 55/2019. It is a private, non-profit association comprising only members from the public sector. The first members were the Foundation for Science and Technology; the National Agency for Innovation; the General Directorate for National Defence Resources, designated by the Ministry of Defence; and the regional government of the Azores, designated by the autonomous region of the Azores. In December 2019, the autonomous region of Madeira joined Portugal Space as an observer, intending to become a full member in the near future. Portugal Space may integrate other public entities whose activity is related to its purposes. It is the entity responsible for executing Portugal Space 2030 and is tasked with developing the national space sector. All national programmes relating to space are integrated within the agency, and they shall be executed in close connection with the national space surveillance and tracking (SST) programme. It also serves as an ESA Hub.

The participation of Portugal in the EU SST is addressed in Resolution of the Council of Ministers No. 116/2017 of 24 August 2017, which created, under the Ministry of Defence, a temporary body called the Space Surveillance and Tracking Project Group (GPSST). The GPSST was tasked with preparing and implementing national SST capabilities, as well as preparing the national application for the EU SST. The GPSST was further tasked with approving the general terms of the governance model for the national SST programme and was the designated national entity in the EU SST consortium. The Portuguese application to the EU SST was approved in mid-2018 by the European Commission. The GPSST was originally set up for one year, but Resolution of the Council of Ministers No. 113/2018 of 31 August 2018 extended its mandate until 31 December 2018. Since this date, and in accordance with this resolution, the General-Directorate for National Defence Resources has been responsible for managing the national SST programme (and is the designated national entity in the EU SST) and will continue to do so until a new governance model is defined. In May 2021, the national Centre of Space Operations, which processes SST data, was inaugurated in the Azores.

iii AIR Centre

The AIR Centre is an international network research and innovation organisation tasked with implementing the Atlantic Interactions intergovernmental initiative, which aims to explore the Atlantic region in a sustainable way. In July 2017, the White Paper 'Atlantic Interactions' established an integrative approach to outer space, climate, energy and ocean science in the Atlantic, together with emerging methods of data science management. With regard to outer space, the White Paper stresses the importance of space systems and applications. Among other things, it highlights:

- a* the use of mega constellations and small satellites to closely study and monitor the ocean and the atmosphere;
- b* the importance of fostering affordable access to space, especially with regard to the launch of small satellites to collect information on the Atlantic;
- c* the use of space data to improve safety in the Atlantic; and
- d* the use of the Atlantic islands for the implementation of ground facilities for SST.

Following the issuance of the White Paper, several declarations have been signed under High-Level Industry-Science-Government Dialogues, which have been held in several countries. Under the Florianópolis Declaration, which was signed in November 2017, it was agreed that the AIR Centre should be established as an intergovernmental organisation with headquarters in the Azores and with a network of centres in the Atlantic. The Association for the Development of the AIR Centre was legally formed in April 2018 as a non-profit association and Resolution of the Council of Ministers No. 29/2018 of 12 March 2018, among other things, tasks the Ministry of Science, Technology and Higher Education, through the Foundation for Science and Technology, to launch initiatives and support national programmes related to the Atlantic. At the time of writing, the AIR Centre has offices in Brazil, Nigeria, Spain, the United Kingdom and the United States, and nodes spread throughout the Atlantic (in Angola, Brazil, Cape Verde, Ghana, Namibia, Portugal, São Tomé and Príncipe, South Africa and the United States). Several research and technology organisations are also a part of the initiative.

iv Azores International Satellite Launch Programme

The Azores International Satellite Launch Programme (ISLP) was the national initiative for the establishment of a spaceport in the Azores. The ISLP aimed to install an open spaceport whereby more than one type of launcher could be launched from the port. The purpose was to guarantee low-cost, frequent and regular access to space for small satellites. Under the ISLP, companies were called upon to submit expressions of interest (with a deadline of 31 October 2018). A total of 14 were submitted. In accordance with information provided by the Ministry of Science, Technology and Higher Education, interested companies included ArianeGroup, Virgin Orbit, Roscosmos, Sierra Nevada, Rocket Factory Augsburg, Elecnor Deimos, Avio and PLD Space. In total, the expressions of interest included 11 companies from the European Union, two from the United States and one from Russia. The purpose of this international call for interest was to encourage and invite enterprises and public organisations from around the world to collaborate with Portuguese enterprises and research laboratories to design, install and operate a spaceport in the Azores.

A formal open tender was launched in March 2019 for the construction, operation and exploitation of the spaceport² and two final proposals were submitted by a consortium led by Rocket Factory Augsburg and Edisoft, and by the Atlantic Spaceport Consortium, comprising ILEX Space and Optimal Structural Solutions. At the beginning of 2021, it was stated that launches from the port would start from 2023. However, the tender was not awarded as both proposals were excluded for not meeting all the required criteria, leading the regional government of the Azores to indicate that the project would be revised and updated. In April 2022, the government of the Azores authorised the launch of a new public tender for the construction, operation and exploitation of a spaceport in the Azores (Resolution 54-A/2022 of 6 April 2022).

v Legal framework

The National Space Act was approved by Decree-Law No. 16/2019 of 22 January 2019. The National Space Act sets out a number of provisions and measures aimed at facilitating and encouraging private space activity in Portugal. The Azores has also enacted the Azores Regional Space Act (approved by Regional Legislative Decree No. 9/2019/A), which regulates space activities taking place in the Azores and establishes the economic and financial regime for these activities. In addition, the Space Authority also issued Regulation No. 697/2019 on Access to and Exercise of Space Activities (the Space Authority Regulation), which sets out the procedures for obtaining licences and pre-qualifications, as well as for registering space objects and for transferring ownership of space objects. The Azores also issued Regional Implementing Decree 6/2020/A, which approved the Regulation of Licensing of Space Activities in the Autonomous Region of the Azores (the Azores Space Regulation).

2 The tender for construction, operation and exploitation of a spaceport enabling a new generation of launch services, located on the island of Santa Maria, Azores (Procedure Announcement No. 3074/2019 as published in the national Official Journal).

vi International regimes

Portugal became a party to the United Nations Convention on Registration of Objects Launched into Outer Space (the Registration Convention)³ in 2018 and the Convention on International Liability for Damage Caused by Space Objects in 2019.⁴ It had previously acceded to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies and the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space. It is also a signatory to the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water; the Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite; and the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.

II REGULATION IN PRACTICE

i National Space Act

The National Space Act sets out the national framework for accessing and performing space activities, which include space operations and launch-site operations. Space operations comprise the following:

- a Launch and return operations: the activity whereby space objects are intended to be sent or launched into space, notably to be placed in or beyond orbit, and then returned to the Earth's surface. The launch and return operator performs launch and return operations.
- b Command and control operations: the activity consisting of exercising effective control over a space object. The command and control operator performs command and control operations of space objects in outer space, whether temporarily or in transit. Where the space object cannot be controlled or guided, the command and control operator will be deemed the natural or corporate person who hired the launch or exploits the space object, as notified to the Space Authority.

Launch-site operations relate to the management, administration or direction of a launch site, the definition of which includes facilities intended for the return of space objects. The launch site operator manages, administers and directs a launch site.

The National Space Act applies to space activities performed both in the national territory irrespective of the nationality of the operator and outside the national territory by Portuguese operators or operators established in the national territory.

Space activities are subject to a mandatory licence for launch or return operations and command and control operations, and registration of space objects. The National Space Act further created a voluntary pre-qualification system. Under this system, operators, systems, processes, features and specifications can be certified in a set of elements, which may include the technical, economic and financial capacity of operators, the compliance of systems and

3 By means of Decree 24/2018 of 4 October. The Convention became binding for Portugal on 2 November 2018, in accordance with Notice No. 143/2018 of 28 November 2018.

4 By means of Decree 14/2019 of 16 April 2019.

processes with applicable laws and regulations, and the features and specifications of space objects. Pre-qualification aims at streamlining the licensing procedure by waiving the need to submit the information set out in the pre-qualification certificate in the licensing procedure.

There are two types of licence: the individual licence, which is applicable to each type of space operation; and the blanket licence, which is applicable to a series of space operations of the same type. In addition, there are joint licences, which are those applicable to space operations of the same type or a different type that comprise one or more launch or return operations and the corresponding operations of command and control of space objects launched, even if performed by more than one operator. Under the joint licensing procedure, the same or different types of space operations may, even if carried out by more than one operator, be licensed to a single operator for itself and on behalf of other operators.

The licences are granted if the Space Authority is satisfied that a set of conditions have been met, including:

- a* the applicant has the technical, economic and financial capacity for the space operations it intends to carry out;
- b* the space operation duly safeguards damage to the Earth's surface, airspace and outer space, in accordance with applicable national and international commitments;
- c* the space operation ensures the minimisation of space debris as much as possible, in accordance with international principles and commitments;
- d* the space operation is compatible with applicable public security provisions, including on public health and citizens' physical safety;
- e* the space operation does not jeopardise domestic security or the strategic interests of Portugal, nor does it breach Portugal's international commitments;
- f* all other authorisations and certificates required for the purpose of the space operation have been issued by the relevant entities; and
- g* the applicant carries mandatory civil liability insurance as required under the National Space Act.

In addition, the licence may stipulate other requirements, including in connection with environmental matters.

The decision to grant or withhold the licence must be issued by the Space Authority within 90 days of receipt of a complete application. The National Space Act also provides that a special licensing framework, which may consist of shorter deadlines or streamlined procedures, may be defined by the Space Authority for certain circumstances, such as:

- a* if the applicant is a public entity or an international organisation acting under international agreements concluded with Portugal; or
- b* if the intended space operation is performed exclusively for scientific, research and development (R&D), educational or training purposes, or consists of activities with experimental purposes with demonstrable low risk for the Earth's surface, airspace and outer space, including for public health and citizens' physical safety.

The National Space Act also addresses circumstances whereby a licence for space operations has been obtained in another country. First, and in general, the special licensing procedure referred to above can be established for cases where the applicant secured authorisation for the performance of the space activity from another state whose legal framework ensures compliance with applicable international commitments. Second, space operations performed abroad but subject to the National Space Act may be exempted from mandatory licensing if

the operator is able to demonstrate to the Space Authority's satisfaction that it secured the proper authorisations and that it abides by the law of a state with which Portugal has an agreement in place to ensure compliance with its international commitments.

In relation to registration, the National Space Act establishes that space objects for which Portugal is the launching state are subject to registration with the Space Authority, in accordance with Portugal's international commitments. The elements to be registered broadly correspond to those of the Registration Convention. In addition, the National Space Act also provides that the following must be registered with the Space Authority:

- a* space objects whose launch, return or command and control are performed by operators licensed in Portugal;
- b* the transfer of ownership of any space objects whose launch, return or command and control is carried out by operators licensed under the National Space Act;
- c* the end of the useful life of a space object operated and controlled by a command and control operator licensed in Portugal; and
- d* any incident or serious accident suffered by the space object.

As regards liability, the National Space Act indicates that operators are liable for damage caused in the performance of the space activity, as follows: (1) strict liability for damage caused by the space object to the surface of the Earth or aircraft in flight; and (2) liability in the event of fault for damage falling outside the scope of point (1). There is also a mechanism of redress by means of which, if Portugal is held liable, pursuant to its international commitments, for any damage caused by a space object, the state has a right of recourse against the operator that, under the National Space Act, is responsible for that space object. The right of redress will be capped at the amounts to be defined by an order of the members of government responsible for finance, science and technology. However, the cap will not apply in certain circumstances, including in the event of liability for damage due to wilful misconduct or gross negligence, or if the operator fails to comply with its licensing obligations.

Licensed operators are obligated to take out civil liability insurance, with minimum capital to be defined by an order of the members of government responsible for finance, science and technology, and the sea, which may also regulate other minimum requirements for the insurance agreement. By means of this order, the insurance obligation may also be waived or the insured amount reduced in the following circumstances:

- a* operations of launch, return, and command and control of space objects of small dimensions, as defined by the Space Authority;
- b* space operations conducted exclusively for scientific, R&D or educational and training purposes;
- c* if the operator submits another financial guarantee as permitted under the order and this is accepted by the Space Authority; and
- d* operations that demonstrably entail reduced risks, as defined by the Space Authority.

The National Space Act contains a set of provisions for incident and accident reporting, which also include the obligation to notify any manoeuvre, malfunction or anomaly of the space object, or other circumstances arising from or in connection with the space activity that may result in an incident or serious accident. Operators are also subject to obligations relating to the Space Authority's supervision and inspection powers, including the following:

- a* allowing and facilitating free access to the facilities and their annexes, as well as to their devices and instruments;

- b* providing all the information and assistance required for the performance of the supervision and inspection; and
- c* maintaining in their facilities in Portugal a duly organised and updated file containing all relevant documents and records relating to the space activities they perform and to the licensing and pre-qualification procedures.

In addition to its powers relating to licensing, registration, pre-qualification, supervision and inspection, the Space Authority is tasked with assessing and deciding on requests or claims by the operators and resolving disputes in connection with the obligations arising from the National Space Act, between entities subject to these obligations and without prejudice to the possibility of resorting to courts. The Space Authority is also tasked with initiating and dealing with administrative offence proceedings and applying the penalties. In this respect, infringements of the National Space Act are administrative offences that may lead to the application of penalties of between €250 and €44,891.81, depending on whether the operator is a natural or corporate person and the gravity of the offence. There are also ancillary penalties, consisting of the prohibition to perform space activities for a certain period of time and the suspension of licences.

Three additional points are worth mentioning. First, the National Space Act contains provisions on the transfer of a licence and on the transfer of ownership of space objects. The first is subject to authorisation by the Space Authority (which shall only be approved if all legal requirements for its issue are met) and the second is subject to notification to the Space Authority.

Second, there are regulations and orders that complement the National Space Act. These include the regulation by the Space Authority for licensing, registration, pre-qualification and transfer of ownership of space objects, and orders on liability (for caps) and insurance (minimum capital and other minimum requirements, waiver and reduction of insured amounts as permitted by the National Space Act).

The Space Authority Regulation was approved in July 2019. This regulation aims to create simple and effective procedures with a view to promoting private activity. However, some points may create challenges, such as the following:

- a* The Space Authority Regulation does not create a special licensing procedure for the cases foreseen in the National Space Act, but instead establishes that it is the applicant that must require a simplified procedure and the Space Authority, within 10 days, must communicate the ad hoc specific procedures to be followed. This could create uncertainty for the industry regarding the licensing requirements and process to be taken.
- b* The regulation does not seem to be fully aligned with the National Space Act regarding who can obtain a launch licence (as it seems to limit this licence to the launch operator, while the National Space Act extends it to whoever intends to launch a space object, thus also covering payloads). This may raise doubts as to the types of licences operators must obtain.
- c* The regulation seems to limit the possibilities of joint licences for different types of operations, thus preventing these licences from being used for operations of the same type performed by different operators – an option expressly envisaged by the National Space Act.

- d* The regulation requires a level of information from the applicant that may be too burdensome, especially detailed information relating to the spaceport from which a space object will be launched.

In relation to liability and insurance, Portugal Space launched a public consultation on the insurance framework for Portugal and the right of recourse by the state in July 2020. In accordance with its terms of reference (TOR), it was proposed that the insurance would be the lowest value among €50 million or the amount determined by the insurer in accordance with the calculation of the maximum probable loss from the operation – with the insurance having to cover the launch or return operation (or both), the command and control operation and risks in orbit, thus requiring the insurance to have an annual renewal until the end of the satellite’s useful life (with each renewal having to be reported to the Space Authority). Instead of insurance, a bank guarantee or unequivocal proof of assets available in an amount equivalent to the value that would be applicable to the space operation can be accepted as a guarantee. For the cap on the right of recourse, and in accordance with the TOR, €50 million is also proposed, as it is the amount indicated in the minimum insurance coverage. At the time of writing, the publication of the order on insurance and liability is expected in the first quarter of 2023.

The National Space Act also addresses the economic and financial regime applicable to space activities by indicating that it shall promote the economic and financial sustainability of the activities carried out by the Space Authority, notably by means of the collection of fees and levies from the companies and other entities subject to its supervisory powers.

Finally, the National Space Act establishes that the procedures for the licence, pre-qualification, registration and transfer of space objects in connection with activities to be developed in the autonomous regions of the Azores and Madeira, and the corresponding economic and financial framework, are to be established by means of a regional legislative decree.

ii Azores Regional Space Act and Space Regulation

As mentioned in Section I.v, the Azores Regional Space Act was enacted in 2019 and contains the legal framework for licensing, pre-qualification, registration and transfer of space objects relating to activities developed in the Azores (defined as those activities based on both offshore and onshore infrastructures or platforms, including, in this instance, the maritime areas adjoining the archipelago). The Azores Regional Space Act duplicates the provisions of the National Space Act, with some new features. The Azores Regional Space Act:

- a* creates a regional space authority (EER) responsible for the licensing, pre-qualification, registration and transfer of space objects, and the supervision of space activities in the Azores;
- b* indicates that the procedures for licensing, pre-qualification, registration and transfer of space objects are subject to the prior technical review of the Space Authority;
- c* indicates that the EER must communicate to the Space Authority all required information so that the Space Authority can comply with the applicable international obligations (especially those relating to registration of space objects);
- d* clarifies that the EER and the Space Authority shall cooperate in the above procedures, as well as in the supervision of space activities; and
- e* introduces a fee for the use of space, the legal framework of which is unclear and has no parallel in other jurisdictions.

By replicating the conditions of the National Space Act and creating the EER, the Azores Regional Space Act may lead to the duplication of processes that private operators will have to comply with for pursuing space activities in the Azores. For instance, it seems that operators will have to obtain two licences: one from the Space Authority and one from the EER. In addition, it seems that the breach of either act will lead to fines, meaning that operators may be subject to fines twice. However, despite duplicating most of the provisions of the National Space Act, the Azores Regional Space Act has placed some wording in different sections or drafted it in a manner closer to previous versions of the National Space Act (which may indicate that the Azores Regional Space Act was based on an old version of the National Space Bill), which further complicates the coordination and interpretation of the Azores Regional Space Act in relation to the National Space Act.

On 22 July 2021, Regional Legislative Decree No. 24/2021/A amended the Azores Regional Space Act by establishing that the use of infrastructure and platforms situated on Azores land or in its sea space, which integrate the development of space activities in the region, is exercised exclusively by an administrative concession contract to be concluded with the regional government of the Azores. This raises questions of whether the new decree is compatible with both the National Space Act and the Azores Regional Space Act. Indeed, it seems that an entity seeking to engage in space activities through infrastructure and platforms located in the Azores will have to obtain a concession contract, in addition to licensing for the performance of space activities as provided for in both acts. The new wording seems to require a concession contract for the 'use' of infrastructures and platforms in the performance of space activities (such as launches), and not only for their construction or operation.

The Azores Regional Space Act also indicates that regional regulations will be approved for the procedures to license, pre-qualify, register and transfer space objects. In this regard, the Azores Space Regulation was issued on 17 February 2020. The Azores Space Regulation is similar to the Space Authority Regulation, although some differences can be identified, such as in relation to the level of information to be provided, which can be considered more market-friendly than the Space Authority Regulation. However, the Azores Space Regulation does not expressly address coordination issues with the Space Authority, except in relation to pre-qualification, by indicating that requirements for pre-qualification delivered to the Space Authority but relating to space activities to be performed in the Azores shall be analysed and issued by the EER.

The Azores Regional Space Act also indicates that a regional order will be approved in relation to insurance, which may further lead to incompatibilities or duplicated obligations, given that a national order on insurance under the National Space Act is also envisaged. The regional order has not been approved at the time of writing.

From a strictly legal perspective, the National Space Act only indicates that the procedures for the licensing of space activities, and the pre-qualification, registration and transfer of space objects, in connection with activities to be developed in the autonomous regions of the Azores and Madeira, are to be defined by a regional legislative decree. However, the Azores Regional Space Act appears, in practice, to replicate the national regime.

III DISTINCTIVE CHARACTERISTICS OF THE NATIONAL FRAMEWORK

The Portuguese space framework contains a set of distinctive features resulting from the National Space Act and the approach taken with regard to the future spaceport of the Azores.

The National Space Act does not cover the operation of spaceports except for the purposes of pre-qualification (and supervision). This means that the licensing regime applies only to the launch, operation and return of space objects and not to terrestrial activities consisting of building and operating a spaceport. Hence, instead of a licensing regime whereby any stakeholder could install a spaceport in the country provided that certain requirements are met, the approach has been to select a general location (currently, the island of Santa Maria in the Azores) and open that location to a public tender for the selection of an operator.

Another distinctive characteristic is that the National Space Act indicates that the procedures for licensing, pre-qualification, registration and transfer of space objects relating to activities taking place in the Azores and Madeira will be defined by a regional legislative decree. This is especially important for operators that intend to carry out space operations in the future Azores spaceport, because the Azores has already enacted the Azores Regional Space Act.

It is clear that there are several points in the Azores Regional Space Act that must be harmonised with the National Space Act. In turn, certain procedures in both acts must be harmonised with the procedure for the spaceport, to avoid differing, incompatible or burdensome obligations for operators. The exact details of how this coordination will be achieved are yet to be determined, as they depend upon the approval of the regional regulations by the Azores and the practical approach that the Space Authority and the EER will take in their relationship.

The National Space Act contains a number of innovative solutions aimed at encouraging private activity in Portugal, which are outlined below:

- a* In addition to an individual licence for each space operation, an operator can obtain a blanket licence covering a set of operations, which will facilitate the launching of constellations of satellites. A joint licence for several space operations, even if performed by different operators, can also be obtained, which will simplify the licensing of related space operations.
- b* A simplified licensing procedure may be implemented in certain situations, as indicated above, such as for operations that are carried out exclusively for scientific, R&D, educational or training purposes, or for experimental operations with low risk.
- c* In the event of space operations carried out by Portuguese nationals abroad, the requirement for a licence can be waived provided that certain other requirements are met. In addition, if the operator obtained a licence abroad, it may also obtain the Portuguese licence under a simplified licensing procedure.
- d* A pre-qualification regime has been created to expedite the licensing process, removing the need to resubmit the same information for future licences.
- e* A liability cap favouring operators in cases where Portugal is internationally liable for space activities has also been established. At the time of writing, the amount of the cap is yet to be established by order, in line with the public consultation that took place in 2020.
- f* There is mandatory civil liability insurance, but the insurance may be waived or the insured amount reduced in certain cases, such as for small satellites, space operations carried out exclusively for scientific, R&D, educational or training purposes, or operations with low risk. Insurance may also be waived or reduced if the operator submits another financial guarantee as permitted by the future order and if accepted by the Space Authority.

- g A breach of the National Space Act carries fines only, which cannot exceed €44,891.81. Ancillary sanctions prohibiting the carrying out of space activities or suspension of licences are established for certain cases.

The Space Authority is a one-stop shop, meaning that it may also assume responsibility for communicating with all other competent authorities whose authorisation may be required for a space operation, thus avoiding the need for operators to deal directly with the authorities.

To ensure that the solutions listed above are effective, careful coordination with the Azores Regional Space Act is required. The Azores Regional Space Act duplicates the conditions for licensing, pre-qualification, registration and transfer of space objects and may, as a result, create unexpected burdens for operators. Clarification of the procedures established in the Space Authority Regulation and the harmonisation of these procedures with the National Space Act may also have to be evaluated to guarantee a clear, simple and predictable legal framework.

IV CURRENT DEVELOPMENTS

Portugal has been active in recent years when it comes to space activities, as indicated in this chapter. The National Space Act and the Azores Regional Space Act have been enacted, with the National Space Act having been drafted with due attention to the need to respond to the advent of small satellites and constellations of satellites. However, at the time of writing, the complete framework is still under construction: notably, the orders on liability and insurance need to be approved, and the fees for licences have not yet been determined.

A relevant project is being developed under the Portuguese Recovery and Resilience Programme for the construction of an Atlantic constellation of microsatellites in collaboration with Spain, together with the development of the Earth observation (EO) data platform, Digital Planet.

Additionally, two EO satellites (Deimos-1 and Deimos-2) were acquired by GeoSat in 2021. As a result, GeoSat has become one of the biggest satellite operators in Europe and the first Portuguese company to own and operate EO satellites.

We further note that, in 2021, Portuguese entity CEiiA signed a partnership with Rocket Factory Portugal for the production of launching systems in Portugal.

Finally, Portugal ratified the Square Kilometre Array Observatory Convention on 12 March 2019. Resolution No. 1/2021, approving this convention, was published on 15 January 2021.

V OUTLOOK AND CONCLUSIONS

The National Space Act contains a set of innovative solutions for Portuguese and foreign operators in the country. Together with Portugal Space 2030 and the projects that are currently underway, it is paving the way for increasing space activities and furthering the development of the private sector and of R&D in Portugal. The increasing contributions to ESA, as well as the strengthening of international cooperation (including with the European Maritime Safety Agency and the EU Agency for the Space Programme), as indicated in Portugal Space 2030, are also relevant incentives for encouraging space activities in Portugal.

New legislative approaches to the regulation of spaceport installation and operations at national level are also under discussion, and may bring about a clearer framework for those activities in a unified manner throughout the Portuguese territory.

The possibility of a framework for EO data, space mining, human space flight and suborbital flights has not been discussed (the National Space Act can be interpreted to include suborbital flights of space objects – although this view may require clarification from the Space Authority). However, the expected growth in space activities and the increased visibility the current initiatives will inevitably bring to the country may lead to greater awareness in these areas and contribute to the approval of relevant regimes. The clear investment in EO may well lead to a legal framework in this area in the short to medium term. The work of both the Space Authority and Portugal Space will naturally continue to play an important role in clarifying, detailing and encouraging initiatives and activities in the sector.

ABOUT THE AUTHORS

MAGDA COCCO

Vieira de Almeida & Associados

Magda Cocco is head of the information, communication and technology practice group at VdA, and is head of the firm's aerospace sector. Magda has been involved in various space-sector projects, including the negotiation of contracts for satellite construction and launch and for the installation of ground stations, and assisted governments in connection with the definition and drafting of space-related strategies and legislation.

Magda has in-depth knowledge and experience in advising clients in the field of information, communication and technology across several jurisdictions, particularly Portugal and Portuguese-speaking countries. She has also provided expert advice to companies and public entities across different industries on data protection and cybersecurity, assisted several entities in connection with governance matters and data-related strategies, coordinated compliance programmes, and assisted public and private entities in connection with cybersecurity threats.

Magda is VdA's representative at the International Astronautical Federation and is responsible for liaising with the Alliance for Affordable Internet. She participates in several space sector-related forums, namely the United Nations Office for Outer Space Affairs.

HELENA CORREIA MENDONÇA

Vieira de Almeida & Associados

Helena Correia Mendonça is a principal consultant in the information, communication and technology practice group at VdA, as well as in the aviation, space and defence sector of the firm, and regularly works on space matters.

Helena has drafted space policies and strategies – particularly for African countries – and space laws, and advised on satellite contracts (including of construction and lease capacity), installation of ground stations and partnership agreements in the sector. She also advises on cybersecurity in the space sector.

Helena has been involved in major operations in the information, communication and technology sector, including outsourcing projects for major banks, cooperation and technology transfer projects, set-up of media services and online platforms, and drafting laws on electronic commerce, digital signatures, digital identity, protection of software and cybercrime.

She works with emerging technologies, including distributed ledger and blockchain, robotics and artificial intelligence, and autonomous and driverless vehicles. She also has experience in fintech, advising on mobile payments, payment services and e-money.

CRISTINA MELO MIRANDA

Vieira de Almeida & Associados

Cristina Melo Miranda is a senior associate in the corporate and mergers and acquisition practice group, and regularly works on space matters.

Cristina joined VdA in 2013 and has been involved in several transactions in the infrastructure, energy and natural resources sectors, including the financing thereof. She also works with emerging technologies, including autonomous and driverless vehicles.

VIEIRA DE ALMEIDA & ASSOCIADOS

Rua Dom Luís I, 28

1200-151 Lisbon

Portugal

Tel: +351 21 311 3400

Fax: +351 21 311 3406

mpc@vda

hcm@vda.pt

mcm@vda.pt

www.vda.pt

ISBN 978-1-80449-137-9