

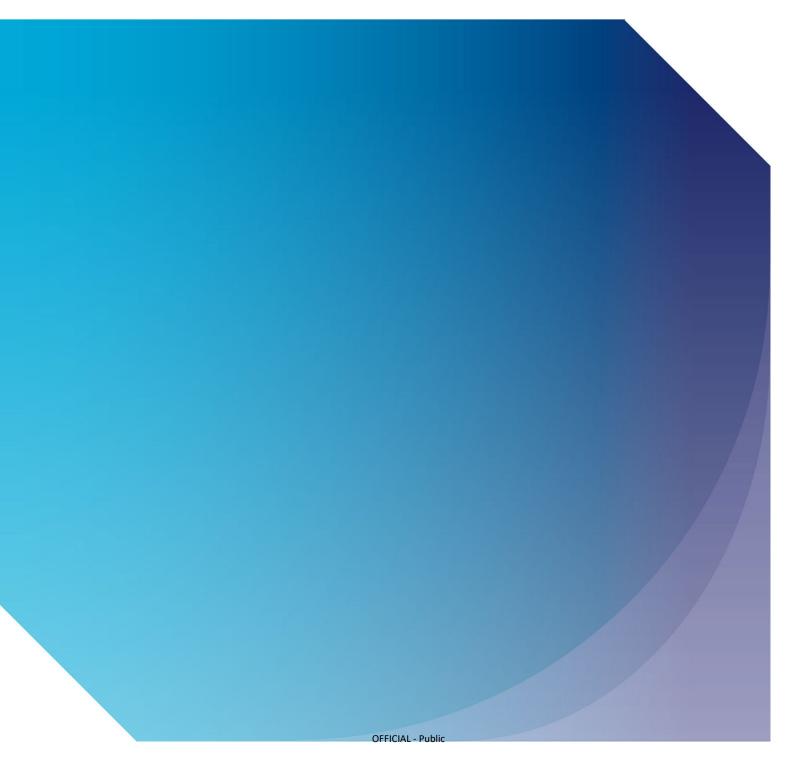






Guidance on insurance requirements and liabilities under the Space Industry Act 2018

CAP 2218



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Section 1: Overview of the Guidance

All applicants and licensees should note that the liabilities and insurance requirements will be specific to each licence. Any examples provided here should be considered as illustrative only. We would encourage potential applicants to engage as early as possible with the regulator to discuss the potential scope of liabilities. Applicants should also note that the Government is carrying out a review of insurance and liabilities requirements and that therefore this guidance may be subject to change.

- 1.1 The Space Industry Act 2018 (the Act) regulates all spaceflight activities carried out in the United Kingdom, and associated activities.
- 1.2 The Act requires any person or organisation wishing to:
 - launch a launch vehicle from the UK
 - return a launch vehicle launched elsewhere than the UK to the UK landmass or the UK's territorial waters
 - operate a satellite from the UK
 - conduct sub-orbital activities from the UK
 - operate a spaceport in the UK, or
 - provide range control services from the UK

to obtain the relevant licence.

- 1.3 It is supported by <u>The Space Industry Regulations 2021</u> (the Regulations), that set out in more detail the requirements for each licence, and the <u>Regulator's Licensing Rules</u>, which specify which application form to use to apply for a licence and what information the regulator will require in support of an application.
- 1.4 There is then a series of guidance documents designed to help explain how to comply with the Act and the Regulations. This document is one of the guidance documents.

With the coming into force of section 1(3) of the Act, the Outer Space Act 1986 no longer applies to space activities carried on in the United Kingdom, and accordingly the Outer Space Act 1986 does not apply to a person or organisation wishing to carry out spaceflight activities or operate a spaceport in the United Kingdom. The Outer Space Act 1986 will continue to regulate the following activities carried out overseas by UK entities: the procurement of the overseas launch of a space object, whether such procurement is carried out within the UK or overseas; the operation of a satellite in orbit from an overseas facility by a UK entity. Extant licences granted under the Outer Space Act 1986 for the carrying out of space activities from within the UK will continue to be governed under that regime. Where an application for a licence has been made under the Outer Space Act 1986, it will be assessed under that Act and – where successful – will result in the award of a licence under the Outer Space Act 1986.

What is the purpose of this document?

1.5 This guidance explains the liabilities and insurance requirements that will be placed on organisations that conduct spaceflight activities in the UK.

- 1.6 This guidance covers insurance requirements and liabilities for spaceflight activities launched from the UK as covered by the <u>Space Industry Act 2018</u> and the Space Industry Regulations. This guidance focuses on the requirements for third-party liability insurance for launch activities and how the regulator will calculate the insurance requirement using the Modelled Insurance Requirement (MIR) approach. This guidance also sets out the UK Government's approach to limiting an operator's third-party liability and who is not able to make a strict liability right of claim. ¹
- 1.7 This guidance provides further detail on the licensing process and other aspects of insurance and liabilities which will be of interest to all licensees and applicants.

What are the liability and insurance requirements for in-orbit operations and procuring a launch?

In-orbit operations

- 1.8 The approach to setting insurance amounts and limits of liability for in-orbit operations for satellites launched from or operated from the UK and licensed under the Act will mirror the current policy adopted for licences issued under the Outer Space Act 1986 (as amended). This will apply to inorbit activities. Under this approach, the regulator will determine whether a mission is a standard mission, or a higher risk mission.
 - Standard missions represent very low and well-characterised third-party risks. For licensing purposes, the regulator defines a standard mission as a mission involving a single satellite employing an established launcher, a proven satellite platform, and recognised operational practices.
 - A standard mission will require a € 60 million indemnity limit. The regulator will in most cases require that a standard mission is covered by a € 60 million 'any one occurrence' third-party liability insurance policy. The regulator may also allow for an operator to place all satellites that count as 'standard missions' onto a single 'any one occurrence' insurance policy.
 - For higher risk missions, the regulator may set the liability limit and insurance amount at a higher level. It can do this where the mission is:
 - o novel in nature or scale, and / or
 - o uses techniques, technologies and / or systems which are unproven, and / or
 - o presents a higher risk of high-value third-party liability (TPL) claims and / or
 - presents TPL risks that are not well-characterised
- 1.9 The waiver of insurance will also apply in the same way as currently under the Outer Space Act 1986.

Procuring a launch

1.10 Orbital licensee liability for the launch phase will be set at the same amount as the limit of liability of the launch licensee.

¹ <u>Strict liability</u> – Under <u>section 34(2) of the Act</u>, an operator is strictly liable for injury or damage caused in the UK to people or their property on land, territorial waters or in relation to an aircraft in flight or persons and property on board such an aircraft as a result of spaceflight activity. This means that a person sustaining injury or damage does not have to prove the operator was at fault to obtain compensation and become involved in complex litigation. A full list of those who do not have a strict liability right of claim is included in <u>regulation</u> <u>218</u>.

For details of insurance under the Outer Space Act 1986, read the guidance on <u>How to get a licence to launch or operate a satellite, or manage other activities in outer space, under the Outer Space Act</u> 1986.

General

- 1.11 This guidance provides applicants and licensees with details of:
 - the amount and duration of cover required
 - who needs to take out the insurance
 - who and what needs to be covered
 - how the insurance requirement for a launch is calculated under the MIR
 - operator responsibilities, including requirements for the provision of insurance documentation to the regulator
 - the limiting of operators' third-party liability and
 - cases in which a limit will be disapplied

Who is this guidance for?

- 1.12 This guidance is for any organisation that wishes to apply for a launch operator, return operator or orbital operator licence under the Act.
- 1.13 The guidance will also be of relevance to applicants for a spaceport or range control licence.

Using this guidance

- 1.14 The guidance should be read in conjunction with <u>sections 34-38 of the Act</u> and the <u>Space</u> Industry Regulations 2020.
- 1.15 If applicants have any queries, they are encouraged to contact the regulator to seek clarification or gain further information.

The regulator

- 1.16 The Civil Aviation Authority (CAA) will perform the functions of the regulator under the Act. It is referred to in this guidance as 'the regulator'. Under <u>section 2 of the Act</u>, the regulator must carry out its functions relating to spaceflight activities with a view to securing the health and safety of members of the public and the safety of their property. This duty has primacy over the other matters that the regulator must take into account in exercising its functions.
- 1.17 In performing its functions, the regulator will need at times to review confidential and commercially sensitive information. The regulator already has robust security processes in place that will ensure all the information sent in relation to applications, and monitoring ongoing licensed activities, is handled and protected appropriately. For more details on the regulator's security processes and systems, please contact the regulator.

Contacting the regulator

The regulator can be contacted by email to commercialspaceflight@caa.co.uk. The regulator welcomes and encourages ongoing contact from prospective applicants before they submit an

application for a licence. This can be from the earliest stages of considering whether to apply for a licence.

Key terms

1.18 The Act regulates:

- space activities.
- sub-orbital activities and
- associated activities

that are carried out in the UK.

- 1.19 As set out in section 1 of the Act, "space activity" means
 - (a) launching or procuring the launch or the return to earth of a space object or of an aircraft carrying a space object
 - (b) operating a space object, or
 - (c) any activity in outer space
- 1.20 "A space object" includes the component parts of a space object, its launch vehicle and the component parts of that.
- 1.21 "Sub-orbital activity" means launching, procuring the launch of, operating or procuring the return to earth of:
 - (a) a rocket or other craft that is capable of operating above the stratosphere
 - (b) a balloon that is capable of reaching the stratosphere carrying crew or passengers, or
 - (c) an aircraft carrying such a craft

but does not include space activity. By way of clarification, the regulator will use the International Standard Atmosphere (47km) as the stratopause (i.e. the upper limit of the stratosphere) for the purposes of determining whether an activity is 'sub-orbital'.

- 1.22 Space activities and sub-orbital activities are referred to in the Act as "spaceflight activities".
- 1.23 "Spacecraft" means a space object, a rocket or other craft that is capable of operating above the stratosphere or a balloon that is capable of reaching the stratosphere carrying crew or passengers, that is used for spaceflight activities. It includes satellites.
- 1.24 "Launch" is defined in the Act as including causing a craft to take off (or releasing a balloon).
- 1.25 <u>Regulation 2</u> of the Space Industry Regulations defines a launch vehicle, other than in references to a "US launch vehicle", as:
- "(a) a craft to which section 1(5) of the Act applies and the component parts of that craft, or (b) a space object which is a vehicle and the component parts of that vehicle, that is used for the purpose of the proposed spaceflight activities or the operator's spaceflight activities, as applicable, but does not include a payload carried by the launch vehicle;"
- 1.26 The "craft to which section 1(5) of the act applies" referred to in part (a) of this definition are:
 - a rocket or other craft that is capable of operating above the stratosphere
 - a balloon that is capable of reaching the stratosphere carrying crew or passengers

Part (b) of the definition covers vehicles that are capable of reaching orbit, such as those used to place a satellite payload in orbit. As explained below, the operator of any satellite carried on board a launch vehicle does not require their own launch operator licence, but does require an orbital operator licence.

- 1.27 Associated activities include the operation of spaceports and range control functions.
- 1.28 Under the Act, any site from which a spacecraft or carrier aircraft is intended to launch is considered a spaceport and must be licensed. A site at which controlled and planned landings of spacecraft are to take place is also a spaceport and must be licensed. Further information on sea launch can be found in section 10 below.
- 1.29 Range control services are defined in section 6 of the Act as:
 - (a) identifying an appropriate range for particular spaceflight activities;
 - (b) co-ordinating arrangements for the activation and operation of the range;
 - (c) obtaining all necessary information for identifying the range and for co-ordinating its activation and operation;
 - (d) ensuring that notifications are issued for the protection of persons who might be put at risk by spacecraft or carrier aircraft within the range or in the vicinity of it;
 - (e) monitoring the range, and the spacecraft or carrier aircraft for which it is provided, to ascertain
 - (i) whether the restrictions or exclusions to which the range is subject are complied with:
 - (ii) whether planned trajectories are adhered to;
 - (f) communicating any failure to comply with those restrictions or exclusions, or to adhere to those trajectories, for the purpose of enabling any appropriate actions to be taken in response;
 - (g) any prescribed services provided for the purposes of, or in connection with, services within any of paragraphs (a) to (f).

1.30 Under section 13(1) of the Act, the regulator has the power to include conditions in an operator licence (launch operator licence, return operator licence and orbital operator licence), spaceport licence and a range control licence. Licensees must comply with those conditions. Schedule 1 of the Act includes a list of examples of conditions, but this is not exhaustive, and the actual conditions included in a licence will vary depending on the operation planned and the type of licence issued. When deciding what conditions to include in a licence, the regulator must consult the public bodies, including the Health and Safety Executive, listed in section 13(6) of the Act. Whenever the guidance refers to the regulator imposing conditions (other than a condition which the regulator is required to impose via the Regulations under section 13(3)), the obligation to consult these bodies applies.

Carrying out spaceflight activities at sea

1.31 If a person is proposing to launch or carry out other spaceflight activities from UK territorial waters or from a UK flagged ship elsewhere, the Act and Regulations will regulate the activities. A regulation referring to land also applies, if appropriate, to spaceflight activities from a ship. For example, if appropriate, reference to a "place" or "other place" from which activities take place has been added to a regulation which refers only to activities from land. If a person is proposing to launch

or carry out other spaceflight activities from a foreign flagged ship outside UK territorial waters and is a British national, UK body corporate or Scottish firm, the Outer Space Act 1986 regulates these activities.

1.32 Sea launch and other sea activities are a complex area; organisations wishing to conduct sea launches are advised to contact the regulator before applying for a licence. Further information on this can be found in section 2 of the guidance document <u>Applying for a licence under the Space</u> Industry Act 2018.

Requirements and expectations

1.33 Where the guidance uses the term "must", this refers to a requirement in or under the Act. If applicants / licensees fail to meet that requirement, it could result in the licence not being granted or being revoked or suspended. Where it is stated that "the regulator expects" applicants to do something, this describes a preferred approach; however, it is not a legal requirement to comply with the regulator's expectations.

Types of licence

1.34 The Act refers to three types of licences that can be awarded:

- operator licence
- spaceport licence
- range control licence

1.35 Following the publication of the Act, it was agreed that there should be different licensing requirements for different types of operators. For example, some organisations that would want to operate space objects (such as satellites or research vehicles) would not have a launch capability, and instead would wish to procure such capability and then operate the object once it reached orbit. While these organisations clearly do not need a licence to operate a launch vehicle, they are still required to obtain an operator licence to operate their object in space. Reflecting the various circumstances, there are now five licences available:

• Launch operator licence: means an operator licence within section 3 of the Act which authorises a person or organisation to carry out spaceflight activities that include launching a launch vehicle or launching a carrier aircraft and a launch vehicle. This is the type of licence needed if a person or organisation wants to launch a launch vehicle or use a carrier aircraft to assist with a launch of a launch vehicle. A person or organisation holding a launch operator licence is referred to as a spaceflight operator, or in some circumstances, launch operator licensee. If a launch operator licensee wishes to return a launch vehicle launched from the UK or the UK's territorial waters to land in the UK, it can apply to do so under the launch operator licence and does not need to apply for a separate return operator licence.

² The term spaceflight operator is used in the Regulations to refer to both the holder of a launch operator licence and the holder of a return operator licence. Any references to spaceflight operator in the Regulations or guidance encompass both licence types, so any requirements for spaceflight operators are applicable to both launch operator licensees and return operator licensees. Where a requirement only applies to either a launch operator licensee or return operator licensee, this is clearly stated.

³ Ships used for sea launch or landing are not "sites" and are therefore not spaceports for the purposes of section 3 of the Act and so do not need a spaceport licence. However, certain types of installations at sea may be regarded as a "site or "other place" and so come within the definition. A person who wants to launch from, or land at, an installation at sea should contact the regulator to find out whether the installation they propose to use requires a spaceport licence.

- Return operator licence: means an operator licence within section 3 of the Act which is not a launch operator licence and which authorises a person or organisation to operate a launch vehicle, launched into orbit from elsewhere than the United Kingdom, in order to cause that vehicle to land in the United Kingdom. This is the type of licence needed if a person or organisation wants to return a launch vehicle, launched elsewhere than the United Kingdom, to land in the UK or within the UK's territorial waters. A person or organisation holding a return operator licence is referred to as a spaceflight operator, or in some circumstances, return operator licensee.
- Orbital operator licence: means an operator licence which authorises a person or organisation to procure the launch of a space object into orbit, operate a space object in orbit or conduct other activity in outer space. The most common example of activities that would be licensed under an orbital operator licence are the procurement of a satellite launch and the operation of a satellite. However, the licence may also cover any other activity in outer space, and is not limited to activities in Earth's orbit. For example, an orbital operator licence would be needed for missions in lunar orbit, lunar surface missions, or deep space probes. A person or organisation holding an orbital operator licence is referred to as an orbital operator licensee.
- Spaceport licence: means a licence granted under section 3 of the Act authorising a person or organisation to operate a spaceport (i.e. a site from which spacecraft or carrier aircraft can be launched or a site at which controlled and planned landings of spacecraft can take place³). Spaceports can be licensed for vertical or horizontal launches (or potentially both). A horizontal spaceport must be located at an aerodrome that is already CAA licensed or certified, and National Aviation Security Programme (NASP) directed. A person or organisation holding a spaceport licence is referred to as a spaceport licensee.
- Range control licence: means a licence granted under section 7 of the Act authorising a
 person or organisation to carry out range control services in relation to spaceflight activities.
 That includes identifying an appropriate range; coordinating the use of a range; issuing
 protective notifications and monitoring the range. A person or organisation holding a range
 control licence is referred to as a range control licensee.

Examples of offences and enforcement directions under the Act

1.36 Under section 3 of the Act, it is an offence to carry out spaceflight activities or operate a spaceport in the UK without the required licence. It is also an offence to make a false statement for the purpose of obtaining an operator licence or a spaceport licence. A person who commits an offence under this section of the Act may be liable to a fine or imprisonment for a term not exceeding 2 years, or both.

1.37 Under section 7 of the Act, it is an offence for range control services to be provided by anyone other than the Secretary of State, or a person or organisation authorised to provide them by a range control licence. It is also an offence for a person to make a false statement for the purpose of obtaining a range control licence. A person who commits an offence under this section of the Act may be liable to a fine or imprisonment for a term not exceeding 2 years, or both.

- 1.38 Under section 13 of the Act, the regulator can grant a licence subject to conditions it thinks appropriate or must include a licence condition if required to do so by a regulation (see regulations 9(5) and 10(2)). When a condition is imposed, it is an offence for a licensee to fail to comply with that condition.
- 1.39 Under section 17 of the Act, it is an offence for a spaceflight operator to allow any person to take part in spaceflight activities without them having given their informed consent and fulfilling the age and mental capacity criteria referred to in Part 12 of the Regulations. Under section 18 of the Act, it is an offence a licensee to allow any unqualified individual to take part in activities authorised by the licence or work in a specified role.
- 1.40 Under section 27 of the Act, the regulator can also issue directions that enable effective enforcement action to be taken, where it appears to the regulator that a person is carrying out spaceflight activities or associated activities without a licence, in contravention of licence conditions or in contravention of the Act or rules made under it.
- 1.41 Under section 27(2), "the regulator may give any directions to that person that appear necessary to be in the interests of safety or for the purposes of securing compliance with—
 - (a) the conditions of a licence,
 - (b) provisions contained in or made under this Act, or
 - (c) the international obligations of the United Kingdom."

It is an offence for a person in receipt of a section 27 direction to fail to comply with it (see <u>section</u> <u>31(3)(a) of the Act)</u>. The regulator could also, if it wished to do so, enforce compliance by way of an injunction or equivalent (see section 31(4)).

1.42 There are further direction-making powers in the Act, including power for the Secretary of State to give directions under <u>section 28(3)-(4)</u> and <u>section 29(1)</u>.

The full list of guidance documents issued in relation to the Act

- 1.43 The following guidance documents are available in relation to licences that can be granted under the Act (and any statutory instruments made under the Act):
- Applying for a licence under the Space Industry Act 2018
 - Guidance for launch operator and return operator licence applicants and licensees
 - Guidance for spaceport licence applicants and licensees
 - Guidance for range control licence applicants and licensees
 - Guidance for orbital operator licence applicants and licensees
 - Guidance for the assessment of environmental effects
 - Guidance on security matters for applicants and licensees
 - Guidance on the investigation of spaceflight accidents
 - Guidance on appealing decisions made under the Space Industry Act 2018 and the Outer Space Act 1967
 - Guidance on insurance requirements and liabilities under the Space Industry Act 2018
 - Guidance on duties for all licensees under the Space Industry Act 2018 including monitoring and enforcement by the regulator

1.44 In addition, applicants and licensees must follow the <u>Regulator's Licensing Rules</u> and are advised to read the <u>Principles and guidelines for the spaceflight regulator in assessing ALARP and acceptable risk.</u>

Section 2: Legislative Background

The Space Industry Act 2018

- 2.1 As set out above, the Act regulates all spaceflight activities (which includes space activities and sub-orbital activities) and associated activities carried out in the United Kingdom.
- 2.2 It requires any person or organisation wishing to undertake such activities to obtain the relevant licence.
- 2.3 The Outer Space Act 1986 still applies to activities taking place overseas by UK entities. For example, if a UK satellite manufacturer procured a launch for its satellite from the UK, it would have to do so under the Space Industry Act 2018. If the same manufacturer procured a launch for its satellite from any other country, it would have to do so under the Outer Space Act 1986.

Liability and insurance provisions in the Space Industry Act 2018 Liabilities provisions

- 2.4 <u>Section 34</u> of the Act places a strict liability on an operator carrying out spaceflight activities in the UK. This means that third parties in the UK suffering injury or damage can bring a claim against an operator without having to prove fault.
- 2.5 This section also contains a power to make regulations that set out the individuals who are taking part in, or who are connected to spaceflight activities, taking place from the UK, who **do not** have a strict liability right of claim against an operator (section 34(3)(a)).
- 2.6 <u>Section 36</u> places a liability on a person carrying out spaceflight activities to indemnify the Government or listed person or body for any claims brought against them for loss or damage caused by those activities. This is in line with requirements under the Outer Space Act 1986.

Insurance provisions

2.7 <u>Section 38</u> of the Act covers provisions relating to insurance. It is not currently intended to make regulations under this section. Instead, insurance requirements under the Act will be set out in licence conditions.

Powers to limit operator liability

- 2.8 <u>Section 12(2)</u> of the Act contains a power for the regulator to limit an operator's liability to indemnify the UK Government (as required by section 36) in a licence term. Regulations are not needed to provide for limits on an operator's liability to indemnify Government.
- 2.9 <u>Section 34(5)</u> of the Act contains a power to limit the amount of an operator's liability to third parties which is sustained by prescribed persons or in prescribed circumstances.
- 2.10 All licences issued under the Space Industry Act 2018 will contain a limit of operator liability with respect to claims made under both section 34 and section 36 of the Act.

Cases in which a limit will be disapplied

- 2.11 Section 35(5)(b) of the Act allows regulations to be developed which identify specific cases or circumstances in which the Secretary of State's power under section 35(2) (to indemnify a licensee where a claim exceeds the insurance) or the duty under section 35(3) (to indemnify claimants above a liability limit) does not arise. This means that any such regulations can prescribe circumstances in which the limit on an operator's liability to third parties is disapplied. It is not currently intended to produce additional regulations under section 35(5)(a) or section 35(5)(c) (which provide powers to prescribe limits on the amounts that the Secretary of State may or must pay under section 35(2) or 35(3)), or make provision supplementing section 35(4), which covers the Secretary of State's participation in proceedings.
- 2.12 <u>Section 36(3)</u> sets out that the requirement in section 36(1) to indemnify Her Majesty's Government or a person or body listed in section 36(2) is subject to any limit specified under section 12(2) on the amount of a licensee's liability, except in prescribed cases or circumstances.
- 2.13 Further information can be found below.

Regulator liability

2.14 <u>Section 37</u> of the Act states that the regulator is not liable in respect of spaceflight-related actions except in cases of gross negligence or wilful misconduct by the regulator.

The Space Industry Regulations 2021 and provisions on liabilities

- 2.15 <u>Regulations 218 and 219</u> of the Space Industry Regulations 2021 list the persons who do not have a strict liability right of claim under <u>section 34(2)</u> and cases in which the limit of liability to indemnify Government under <u>section 36</u> can be disapplied. Further information on these provisions can be found below.
- 2.16 In section 34(5) there is a power to make regulations to limit the amount of liability of an operator for injury or damage to third parties. This limit must be set out in an operator's licence. It can be restricted to injury and damage sustained by prescribed persons or in prescribed circumstances. The limit applies to an operator's liability to third parties under section 34(2) and any other third-party liability not covered by section 34(2). This would cover, for example, common law claims made by persons not eligible for the strict liability claim.
- 2.17 Regulation 220 provides that an operator licence must specify a limit on the amount of an operator's liability under section 34(2) of the Act and for any third-party liability not covered by that section. It also sets out how that limit will be determined, and that it will **not** apply where the operator is liable for gross negligence or wilful misconduct, or where damage or loss is caused by non-compliance by the operator with any conditions of its licence or any requirements under the Act or regulations made under the Act.
- 2.18 <u>Regulation 221</u> provides that the power or duty of the Secretary of State to indemnify an operator for claims above an insurance or liability limit does **not** apply where the operator is liable for gross negligence or wilful misconduct, or where damage or loss is caused by noncompliance by the operator with any conditions of its licence or any requirements under the Act or regulations made under the Act.

- 2.19 For launching from the UK, the limit of liability and the insurance amount limit will be set at the same amount as the Modelled Insurance Requirement in most cases. For the procurement of a launch and operating a satellite in orbit, this will follow the existing policy under the Outer Space Act 1986.
- 2.20 In all cases, the liability limit and insurance amount will be set out in an operator's licence.
- 2.21 The regulator has the right to set out any further requirements on insurance as licence conditions (paragraph 35 of Schedule 1 of the Act).

Commencement of the Act

- 2.22 The Space Industry Act 2018 received Royal Assent on 15 March 2020, providing a legislative framework for the licensing of space activities, sub-orbital activities, and associated activities carried out in the UK. However, many of the Act's provisions will only come into force on [date], when the Space Industry Regulations come into force. From that date, people and organisations will be able to apply for a licence to:
 - launch a launch vehicle from the UK for sub-orbital missions involving human occupants, or return such a launch vehicle to the UK
 - launch a launch vehicle from the UK for orbital missions that do not involve human occupants, or return such a launch vehicle to the UK
 - procure the launch from the UK of a space object (such as a satellite) into orbit
 - operate a satellite from the UK
 - operate a spaceport in the UK, or
 - provide range control services in the UK
- 2.23However, at the point the Regulations come into force, it will not be possible to apply for a licence for some activities that are permitted under the Act. These include
 - the licensing of space activities involving an orbital launch vehicle with human occupants
 - the licensing of spaceflight activities involving hypersonic (or any other experimental) transport from A to B
- 2.24 Such activities are technically complex and difficult to regulate. By their very nature, they will require global collaboration on common standards to a much higher threshold than is achievable with current technologies.
- 2.25 These restrictions are set out in Commencement Regulations, which also include provisions to ensure that the licensing of a procurement of an overseas launch carried out under the Outer Space Act can continue to be done under that Act, whether such a procurement takes place in the UK or overseas.

Section 3: The insurance and liabilities provisions in the Space Industry Act 2018

Background

- 3.1 As spaceflight and associated activities come with inherent risk, it is important that those suffering damage or loss as a consequence can be compensated.
- 3.2 Under the UN space treaties, the UK Government is ultimately liable to pay compensation for damage caused by its space objects on the surface of the Earth or in relation to aircraft in flight, and liable for damage due to its faults in space. This means that another state suffering damage can bring a claim against the UK Government under the UN space treaties. If damage occurs on the ground or in relation to aircraft in flight, the liability is absolute, which means that the state bringing the claim would not need to prove fault. If the damage occurs in space, the liability is fault based.

What are the liabilities provisions in the Space Industry Act 2018?

- 3.3 In line with the provisions in the Outer Space Act 1986, section 36 of the Space Industry Act 2018 places a liability on a person carrying out spaceflight activities to indemnify the UK Government or listed person or body for any claims brought against them for loss or damage caused by those activities. The bodies listed in that section³ are ones that may be carrying out functions on behalf of the regulator or will be appointed as a regulator.
- 3.4 This indemnity applies to any claims brought against the Government including claims brought under the UN Convention on International Liability for Damage Caused by Space Objects ('the Liability Convention').
- 3.5 <u>Section 34</u> of the Space Industry Act 2018 places a strict liability on an operator carrying out spaceflight activities in the UK. This means that third parties in the UK suffering injury or damage can bring a claim against an operator without having to prove fault. This provides UK nationals with the same rights as foreign nationals.
 - Under section 34(3)(a), the Government can set out in regulations those persons who do not have a strict liability right of claim
 - Section 34(3)(b) sets out that a strict liability claim is not available to a person whose injury or damage was caused or contributed to, by their own negligence
- 3.6 This strict liability applies to any injury or damage caused to persons (regardless of nationality):
 - in the UK or its territorial waters
 - to an aircraft in flight above the UK or its territorial waters, or
 - to persons or property on board such aircraft

where the injury or damage is caused by:

- any craft or space object being used by the operator for spaceflight activities
- anything falling from such a craft or space object

³ These are: (a) an appointed person; (b) the Health and Safety Executive; (c) the Health and Safety Executive for Northern Ireland; (d) the Office for Nuclear Regulation; (e) a body or person prescribed under section 21(2); (f) a public authority with whom arrangements are made under section 64.

• any person in such a craft

This would include any item jettisoned from the launch vehicle during flight, any debris generated as a result of failure and objects returning from orbit and causing injury or damage within the UK.

- 3.7 Under section 34(1) of the Act, there is no liability in trespass or nuisance in relation to spaceflight activities where these are carried out in compliance or substantially in compliance with the Act or with requirements and conditions (including licence conditions) imposed by the Act or by the regulator.
- 3.8 This means that launch operator licensees or orbital operator licensees who are acting lawfully cannot be sued by a third party who considers that their right to quiet enjoyment of land is being affected.

Who do sections 12(2) and sections 34 to 38 apply to – who is an operator?

- 3.9 The liability and insurance provisions under sections 34 and 36 apply only to persons carrying out spaceflight activities in the UK. In general, this will be either a launch operator licensee, a return operator licensee or an orbital operator licensee.
- 3.9 The liabilities apply to:
 - all licensed operators
 - anyone using a spacecraft or space object in line with an exemption under <u>section 4(4)</u> of the Act
 - anyone carrying out spaceflight activities illegally (i.e. without a licence)

Liabilities and insurance requirements for spaceports and range control service providers

3.10 The Act does not impose a strict liability under section 34 on persons operating spaceports, or "other places" (as defined in in paragraph 1.32 of this guidance) or providers of range control services or require them to indemnify the Government for claims brought against it. This does not, however, prevent anyone from bringing a claim against a person operating a spaceport or providing range control services and proving fault (under common law). Furthermore, spaceports and range control service providers will need to be covered by insurance when spaceflight activities are conducted. In line with usual commercial practice, the UK

Government would anticipate that the spaceport and range control service provider(s) will be named as additional insureds on the insurance policy taken out by the launch operator for a specific launch / series of launches.

- 3.11 The regulator will also consider licence applications where the insurance for the launch or orbital operator is covered under the insurance policy of the spaceport operator.
- 3.12 There is no requirement for the spaceport or the range control service provider to take out a specific policy themselves, separate to that taken out by the launch operator. This includes for prelaunch activities. A separate MIR calculation is therefore not needed for spaceports and range control service providers.

Provisions in the Act to limit operator liabilities

- 3.13 As set out in section 2 above, the Act contains powers to limit, via regulations and in licence conditions, the two types of operator liability identified above.
- 3.14 All licences issued under the Space Industry Act 2018 will contain a limit of operator liability with respect to claims made under both section 34 and section 36 of the Act.

Section 4: Overview of insurance requirements in licence conditions

4.1 This guidance sets out the Government's policy on the insurance requirements which will be contained in licence conditions. This includes some standard conditions which will apply to all spaceflight activities as set out below. However, the regulator may also impose conditions relating to insurance requirements on a case-by-case basis. These are described in further detail in other parts of this guidance.

Proposed licence conditions

4.2 Insurance requirements will be set out in licence conditions. This is in accordance with <u>Schedule</u> <u>1 of the Space Industry Act</u>, which sets out the conditions that may be included in licences. Paragraph 35 relates to insurance and states:

"Conditions requiring insurance or indemnities, including—

- (a) conditions requiring liability to third parties to be insured for no less than a specified amount;
- (b) conditions as to compliance with requirements imposed by regulations under section 38(1)."
- 4.3 This guidance provides additional information to support these conditions and other aspects of insurance. Details of the types of licence conditions relating to insurance that could be imposed are included in section 7 below.
- 4.4 The aim of licence conditions relating to insurance is to ensure that insurance is available to cover claims made:
 - against the UK Government under the Liabilities Convention and therefore that the indemnity to Government is insured
 - by uninvolved persons in the UK ('third parties')
 - under common law
- 4.5 If a licensee does not meet the conditions relating to insurance or indeed to any other licence conditions the regulator could suspend or revoke the licence. Breach of a licence condition is also an offence under section 13(8) of the Act.

Requirement to hold third-party liability insurance

- 4.6 Operators must demonstrate that they either hold or are able to benefit from third-party liability (TPL) insurance for the duration of the licensed activities. The TPL requirements for different types of operation are set out below. This will be set out as a licence condition, unless a waiver of insurance is granted.
- 4.7 Not all parties involved in a particular operation need to take out individual insurance policies. In line with common practice, it would be acceptable for only one insurance policy to be in place per launch which includes the licensees and UK Government as additional insureds. This will usually be taken out by the launch operator. This reduces costs for spaceflight participants, prevents unacceptable accumulation of risk for insurers and also makes any claims process simpler. However, alternative arrangements may also be permissible and the regulator will consider these accordingly.

- 4.8 Orbital operator licensees will need to demonstrate that they either hold or are able to benefit from TPL insurance (for example, by being named as an additional insured party or by utilising insurance taken out by a parent company).
- 4.9 Orbital operators would be covered by the launch operator's insurance policy for any damage caused by the satellite during the launch phase. Unplanned re-entry during the in-orbit phase of a mission should be covered by existing launch TPL policies (for which liability would be limited to the €60m for standard missions as per the current policy). A policy position is yet to be determined with respect to insurance requirements for a planned re-entry.
- 4.10 The MIR-calculated liability will relate to the launch phase only.⁴
- 4.11 For launch operator licensees, the TPL insurance must cover the duration of the spaceflight activities, as specified in the licence and licence conditions, from and including launch and any reentry activities covered by the licence.
- 4.12 For in-orbit operations, orbital operator licensees will need to take out or have access to TPL insurance as appropriate to cover the period of in-orbit operations as specified in a licence and associated licence conditions. This may include coverage as part of the launch TPL policy, if applicable.
- 4.13 For sub-orbital launches licensed under the Act where the carrier aircraft is the launch platform, launch operator licensees should consider including the carrier aircraft within the TPL policy. The Act contains provisions which can limit third-party liability which would be applicable to a carrier aircraft.
- 4.14 Under existing aviation law, it is not possible to limit liabilities imposed for carrier aircraft in relation to passengers taking part in spaceflight activities, if that carrier aircraft is also used for air transport purposes i.e. to carry passengers or cargo whilst it is being used for spaceflight activities.
- 4.15 Spaceport licensees will need to consider whether they would need to hold an aviation liability insurance policy to cover third-party liability risk associated with spaceport operations.

Length of cover required

- 4.16 Licensees will be required to hold or have access to TPL cover for the duration of the licensed activity until the regulator deems the spaceflight activities to be completed (for example once the spacecraft is positioned to the satisfaction of the regulator, has been passivated and has been switched off).
- 4.17 The requirement will be set out in a licence condition.
- 4.18 For launch operations, the duration of a policy typically varies between launch plus 30 days, up to launch plus one year, based on current market approaches. As a minimum, the regulator expects

⁴ Operators should note that further work is underway as part of the Government's review to look at insurance requirements for different phases of a mission. This may therefore be subject to change.

the insurance to cover launch plus 30 days, which could account for de-orbiting of spent stages from the launch vehicle for example.⁵

- 4.19 Where a licence covers a single launch, the conditions in the licence will set out that the insurance cover needs to be in place and will reflect the specifics for the launch (for example the sum insured, details of named and additional insureds⁶ and duration of cover).
- 4.20 Where a licence is granted for a number of activities (e.g. multiple launches), it is likely that the reporting requirements will be more extensive.
- 4.21 It is envisaged that, alongside generic reporting conditions, there will also be specific reporting conditions to be complied with by a launch operator licensee. These conditions will be specific to the individual launch operator licensee or even tailored to each launch. Depending on the circumstances, the regulator may place conditions on the licence to be complied with during an individual launch or series of launches, or remove conditions previously placed on the licence.
- 4.22 The conditions will depend upon the nature of the licensed activities authorised. This may also mean that the MIR amount and the limit of liability may need to be changed if an MIR 'envelope' or other similar mechanism has not already been agreed. This will be managed through amendments to the license conditions.
- 4.23 Orbital operator licensees must take out TPL insurance to cover in-orbit operations as required by the regulator. It is common for insurance for such operations to be taken out on an annual basis. As licences for in-orbit activities are often issued without an end date, licence conditions will set out that the insurance must be maintained for the duration of the mission, including for any relevant periods which apply to end-of-life life activities, as agreed with the regulator. The end of life plan could involve, raising / lowering the satellite to a graveyard / lower orbit, passivation and switching the satellite off.
- 4.24 If the satellite is to remain in orbit, orbital operator licensees must indemnify the Government for any claims even after the insurance requirement ends.
- 4.25 Orbital operators that have a fleet of satellites in orbit may wish to add a newly-launched satellite to an existing fleet policy which has less than 12 months of cover remaining of the policy period.
- 4.26 From the regulator's perspective, it is important for operators to be able to demonstrate that TPL insurance is maintained for the duration of the licensed activities and that there are no periods of time during a mission for which appropriate TPL insurance cover would not reasonably be expected to be available in the current insurance market.

⁵ Further work is underway to determine possible insurance requirements for re-entry. A longer duration of cover may therefore be required to cover the re-entry of any upper stages.

⁶ There may be other Additional Insureds that the policy holder may wish to include on the policy (other than those specified in the licence conditions).

Defining 'launch' and 'in-orbit phase' for the purposes of insurance

4.27 For the purposes of insurance, it is important to differentiate between the launch and in-orbit phases of a mission.

- "Launch" is defined in the Act as including causing a craft to take off (or releasing a balloon)
- The in-orbit phase will be defined in the licence. Generally speaking, it will be deemed to commence at the point at which separation from the launch vehicle occurs and continue throughout the operational lifetime of the satellite, until the satellite is safely disposed of (as per a pre-approved end of life plan) and is positioned to the satisfaction of the regulator

4.28 As the definitions of launch and in-orbit phase may be different for each mission, operators are encouraged to engage early with the regulator to define these phases, so that an assessment can be made of the insurance and liabilities requirements for individual operators/missions.

Insurance requirements for end-of-life and re-entry of UK licensed space objects

4.29 The UK Government intends to carry out a review of insurance and liability limits and this will cover end-of-life and re-entry activities. A final position on any future requirements will be confirmed at a later date.

4.30 Until the conclusion of this review, the situation described in paragraph 4.24 above will apply.

Provision of insurance documents

4.31 Licensees must provide full details of the insurance cover they have taken out (or other policy by which they are covered) by submitting the relevant policy documents to the regulator, as required in the licence condition. These must be submitted to the regulator before the licence can be issued. Further detail on the documents to be provided is set out below and detail on the licensing process with respect to insurance is set out below in section 6.

Other types of insurance

4.32 In addition to the insurance required under the Act, applicants/licensees may also be required by law to hold other types of insurance (such as (Employer's Liability insurance) or doing so may be recommended as best commercial practice (pre-launch insurance). The regulator may wish to see evidence of these policies during an application.

4.33 There are no mandatory requirements for licensees to hold pre-launch insurance. ⁷ This will be a commercial decision for operators.

4.34 Spaceport licensees and range control service providers may also wish to take out other forms of insurance.

What are the terms applied to insurance policies?

4.35 The terms used in the insurance policy must be those used in the London market.

⁷ It is noted however that launch vehicles licensed by the FAA might require such insurance to be taken out.

Which legal jurisdiction in the UK will apply?

4.36 Subject to certain provisions (see <u>section 71 of the Act</u>), the Act extends to England and Wales, Scotland and Northern Ireland. The licence will set out under which legal jurisdiction the licence will apply.

Section 5: Limiting operator liabilities

- 5.1 All licences issued under the Space Industry Act 2018 will contain a limit of operator liability with respect to claims made under both section 34 and section 36 of the Act. The UK Government will indemnify a claimant for any losses in excess of that limit. The extent of the indemnity will be unlimited.
- 5.2 In most cases, the limit of liability will be set at the same level as the insurance amount calculated under the MIR approach. There may be cases (for example if there is limited capacity in the insurance market and the capacity is not sufficient to cover the insurance amount calculated under the MIR) where the limit of liability will be set at a higher level than the insurance amount. In such cases, the regulator / Secretary of State will assess the ability of the operator to cover the difference between the two amounts.

Cases in which an operator's limit of liability will be disapplied

- 5.3 A limit on an operator's obligation to indemnify Government under section 12(2) of the Act will be applied at the same amount as the limit on the operator's liability to third parties under section 34.
- 5.4 Any limit on a licensee's liability and the power or duty for the Secretary of State can be disapplied in cases of gross negligence or wilful misconduct by the licensee, or in cases of noncompliance with the Act, regulations and licence conditions. This is covered by <u>regulations 219-221</u>.

Limiting operator liability in cases where there is more than one launching state⁸

5.6 In cases where there is more than one launching state involved in the spaceflight activity, different liabilities and insurance arrangements may arise as different launching states apply different insurance and liabilities arrangements from the UK. It is recommended that applicants check with the relevant regulator(s) which arrangements will apply.

Persons who do not have a strict liability right of claim

- 5.7 Government policy in relation to claims resulting from spaceflight activities is that the uninvolved general public should have easy recourse to compensation (in the event of loss or damage) and therefore have a strict liability right of claim. This means that a claimant does not have to prove fault on the part of the operator to claim compensation. This reflects the fact that members of the public will not have access to all of the information needed to prove fault, or knowledge of the complex technicalities involved in spaceflight activities.
- 5.8 This provision was included in the Act because the Government wanted to ensure that any member of the uninvolved general public in the UK who suffers injury or damage from spaceflight activity is entitled to the same compensation (without having to prove fault) as foreign nationals are entitled to under the UN Convention on International Liability for Damage Caused by Space Objects, the "Liability Convention".

⁸ Launching State is defined in Article 1(c) of the <u>Liability Convention</u> as '(i) a State which launches or procures the launching of a space object; or (ii) a State from whose territory or facility a space object is launched.

5.9 The Liability Convention provides foreign nationals with the ability, via their own Government to seek compensation from the UK Government as the responsible launching state for damage or loss without having to prove fault (where it occurs on the ground or to aircraft in flight).⁹

5.10 However, anyone who voluntarily engages in spaceflight activity will have agreed to accept the risks to themselves. They therefore do not benefit from such a strict liability claim.

5.11 Under regulation 218, the following people do not have a strict liability right of claim:

- where a spaceport licensee or a range control licensee is an individual, that licensee
- an appointee, employee or agent of a licensee who is at work at a space site 10
- a member of the crew who has consented to accept the risks involved in an operator's spaceflight activities in accordance with <u>section 17 of the Act</u>
- a spaceflight participant who has consented to accept the risks involved in an operator's spaceflight activities in accordance with <u>section 17 of the Act</u>
- an individual not falling within paragraphs (a) to (d) who is present at a space site in connection with spaceflight activities
- an individual on a carrier aircraft taking part in an operator's spaceflight activities
- an officer or partner¹¹ of a licensee who is present at a space site
- an individual who is within an operational area or a restricted area of a space site at the invitation of a licensee
- an employee or an individual acting on behalf of the regulator or with the regulator's authority at a space site
- an employee or an individual acting on behalf of the government of another country present at a space site in connection with spaceflight activities
- an employee of the emergency services who is on duty at a space site in connection with spaceflight activities
- an employee of the Spaceflight Accidents Investigation Authority who is on duty at a space site in connection with spaceflight activities
- compliance authority personnel on duty at a space site in connection with spaceflight activities
- an employee of a qualifying health and safety authority who is on duty at a space site in connection with spaceflight activities
- a member of the armed forces of the crown who is on duty at a space site in connection with spaceflight activities
- any individual who has entered into a reciprocal waiver of liability with a licensee.

5.12 The disapplication of the right to a strict liability claim therefore applies to organisations that are licensed under the Act, their employees and individuals involved in spaceflight activities

⁹ The strict liability in the Act applies to any person in the UK who suffers injury or damage. It therefore applies to both UK nationals and foreign nationals. Foreign nationals could choose to bring a claim against the UK Government via their own Government via the Liability Convention or bring a claim against the operator under <u>section 34 of the Act</u>. The operator would be liable to indemnify the UK Government for any claims brought against the UK Government by either UK nationals or foreign nationals regardless of the basis of the claim.

¹⁰ Under <u>paragraph 5(3) of Schedule 4</u> of the Act, a space site means a spaceport, range control site or mission management facility.

¹¹ The definition of "partner" is used in the Act in <u>section 58(6)</u>. Partner in the intended sense here relates to a business rather than personal relationship between the parties.

(such as those who sign an informed consent form to take part in sub-orbital spaceplane operations). It also covers contractors and sub-contractors of the licensee (regarded as agents of the licensee), as well as those who are on site during the launch but who may not be agents of the licensee (for example, satellite manufacturers). It also applies to members of other organisations who may be required to become involved in spaceflight activities as part of their employment (such the emergency services or employees of the regulator) but who do not need to sign informed consent forms as per section 17 of the Act. It also includes those who are covered by a reciprocal waiver of liability (see section 11 of this guidance for further detail on cross waivers).

5.13 While not specifically mentioned in the list in <u>regulation 218</u>, persons trespassing at a space site (an individual who is present at a space site or within an operational area or a restricted area of a space site unlawfully or without permission), is unlikely to be able to make a strict liability right of claim in most cases. Trespassers, although not explicitly excluded from making a strict liability claim under <u>section 34(3)(a) of the Act</u>, will need to demonstrate that negligence on their part was not a contributing factor.

5.14 The provision relates specifically to presence at a space site. It does not cover areas downrange of a spaceport. Further detail on the handling of issues downrange can be found in the <u>Guidance for range control licence applicants and licensees</u>.

5.15 If a person enters an exclusion zone, restricted zone or warning zone¹² beyond the space site, a court may subsequently determine that the provision in section 34(3)(b) of the Act applies in respect of any claim.¹³

5.16 The list does not include spectators invited to view the launch who would not be in or near, an operational or restricted area. This is because it is unlikely that spectators would be at sufficient risk that they would be required to sign informed consent forms. However, if spectators were to contravene restrictions on them and enter restricted and / or operational areas, it is likely that they would lose the strict liability right of claim by virtue of section 34(3) of the Act.

5.17 It is important to note that restricting the right to a strict liability claim neither absolves any of those persons of potential liability, ¹⁴ nor does it remove any individual's rights under common

(a) an "exclusion zone" is part of a hazard area to which entry by any vehicle, craft, individual or domestic animal is excluded;

¹² Defined in regulation 50(4) as:

⁽b) a "restricted zone" is part of a hazard area to which entry is restricted to authorised individuals whose presence is necessary for the carrying out of spaceflight activities or for the performance of duties in connection with such activities;

⁽c) a "warning zone" is part of a hazard area to which entry is not restricted but which is subject to a requirement to provide a warning notice in accordance with regulation 54.

¹³ This states that subsection (2) does not apply to injury or damage caused or contributed to by the negligence of the person by whom it is sustained.

¹⁴ The provisions of the Act and <u>regulation 220</u> are consistent with the provisions of the Unfair Contract Terms Act 1977, which prohibits the exclusion of liability for death or personal injury in any contract as regards individuals. The Act and <u>regulation 218</u> do not prohibit a claim, only the newly created strict liability claim. A claim in common law would still be available.

law or other legislation. Employer liability insurance is mandatory and would be an available resource for claims against employers. ¹⁵ Furthermore, employers involved in spaceflight activities will have legal obligations towards their employees to provide additional safety measures.

5.18 It is also important to note that if an incident arises when any of the above listed individuals is not engaged in a spaceflight activity in their official capacity, they would have a strict liability right of claim (for example, if a spaceflight incident caused damage to their home).

¹⁵ See <u>www.gov.uk/employers-liability-insurance</u>

<u>Section 6: Calculating a Modelled Insurance Requirement (MIR) and the licensing process</u>

Overview

- 6.1 The amount of TPL insurance for launch activities is determined by the MIR process conducted by the regulator. This will calculate the minimum amount of TPL that will be included as part of a licence condition. The process takes into account the amount of insurance available in the market. The regulator will determine the amount of insurance required and confirm this as a licence condition.
- 6.2 If a licensee or applicant disagrees with the level of insurance that the regulator has set via the MIR process, the licensee or applicant may request that the regulator considers an alternative figure based on modelling work the licensee or applicant has carried out. If the regulator agrees with the licensee's or applicant's modelled outputs, the regulator will revise the required amount.
- 6.3 If conducting its own modelling, the licensee or applicant must use the financial values below.
- 6.4 If the regulator does not agree with the licensee's or applicant's modelled outputs, the licensee or applicant may appeal the regulator's decision.
- 6.5 In the first instance, applicants and licensees should first seek to discuss the issues with the regulator and explain why you are not happy. If this does not resolve the issue, the operator can appeal through the appeals process. Details of this process can be found in the <u>Guidance on appealing decisions made under the Space Industry Act 2018</u>.
- 6.6 For such an appeal to be considered by an appeal panel, an operator would need to demonstrate that the regulator's actions had been wrong in law, that there had been an error of fact or that there had been an error in the exercise of a discretion by the regulator in determining the insurance requirement and limit of liability. This is set out in paragraph 8 of Schedule 10 of the Act.

The MIR process

- 6.7 The MIR is similar to the Maximum Probable Loss (MPL) approach adopted in the United States and Australia for calculating insurance requirements for space launches. 16
- 6.8 The approach has been adapted to reflect the types of risks associated with launch from the UK and the UK approach to modelling the safety assessment. It applies financial values based on the UK's compensatory regime and commercial / residential property prices. The MIR therefore is designed to set a value for a level of damage that might reasonably be caused in a range of scenarios that could arise in UK circumstances and based on the specifics for each mission. The insurance amount set out in the licence will be determined according to this methodology.

¹⁶ The MPL approach sets out a dollar value assessment of Government and third-party properties at risk of damage from launch-related activities or conduct (www.faa.gov/space/licenses/financial responsibility/), in other words, a calculation of the maximum amount of damage that could be caused.

6.9 It is important to note that a court or a negotiated settlement may determine that the amount of compensation for damage or loss caused could be higher than the figure given by the calculation. However, a licensee's third-party liability as an operator will be limited to the amount set out in the licence (see below).

Elements covered and financial values to be used in setting the insurance requirement

6.10 The UK Government has determined that the following elements must be covered by the TPL insurance requirement.

- death
- injury
- damage to property
- business interruption associated with physical damage
- economic loss arising from physical damage (e.g. the costs of moving to alternative premises)
- environmental damage (e.g. clean-up costs carried out by public authorities)

6.11 Business interruption losses arising from damage to commercial property and agricultural land have also been included in the MIR calculation. Such losses must relate to the physical injury or damage incurred; they may not, for instance, cover any losses incurred by business due to any area restrictions imposed during a launch, although a court would consider the facts of every individual case.

6.12 To assist in the calculation, the UK Government has developed a set of standard values which must be applied to each of these items. These have been informed by calculations provided by the Government Actuary's Department on the average level of compensation award that may be received in the UK and have been agreed with HM Treasury. Data used for this purpose included approved national statistics and other recognised trade body data. All data has been assured from an actuarial perspective.

Launch

Category	Financial Value	
Death	£221,000 per death	
Injury	£199,000 per injury	
Damage / business interruption	Commercial / residential	£1,843 per square metre (which includes business interruption costs arising from damage to commercial property
	Agricultural land	£1.95 per square metre
Environmental damage	£250,000 set figure for all MIR calculations	

NOTE: These figures will be reviewed following the first launches.

6.13 These values will apply for five years following the coming into force of the Space Industry Regulations, at which point they will be subject to a formal review in line with the wider legislation for spaceflight activities. The Government will review the figures following the first launches and annually thereafter to determine whether any further update is needed, due to a significant circumstance within this period and will consult on any proposed changes (for example the Personal Injury Discount Rate applied in compensation cases; if there is a change in the wider methodology for calculating compensation in UK courts; or an economic downturn having a significant impact on the statistics which are the basis for the derived values).

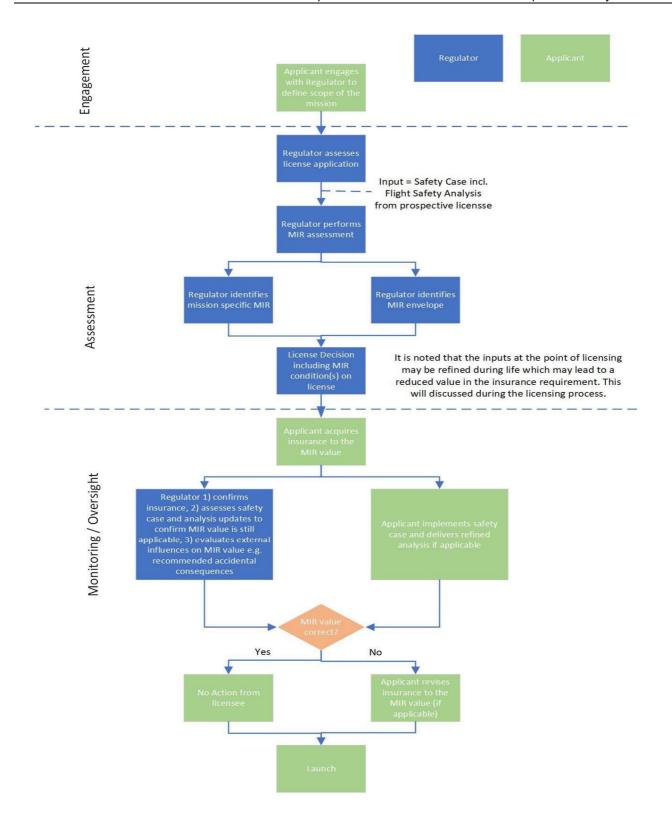
Launch operations MIR calculation

6.14 Further detailed guidance on how the regulator will determine the MIR is covered in the technical guidance document (the Modelled Insurance Requirement Determination process).

Licensing process and timing of determination of the MIR amount

6.15 The regulator will inform the applicant / licensee of the amount of insurance required once the MIR value has been determined. This will ensure that the insurance can be placed before the licence is issued. Sufficient time will be provided to enable the terms of the policy to be finalised, as it is expected that operators will have engaged with insurers at an early stage to discuss whether it is possible in principle to insure the proposed activities.

6.16 Orbital licensees and applicants should note that the process above will be followed to confirm insurance requirements for in-orbit activities (although a different method of calculation applies).



Section 7: Conditions in licences relating to insurance and liability

Overview

7.1 <u>Schedule 1</u> of the Act sets out the conditions relating to insurance and liability that may be included in licences. These are:

"35 Conditions requiring insurance or indemnities, including—

- (a) conditions requiring liability to third parties to be insured for no less than a specified amount:
- (b) conditions as to compliance with requirements imposed by regulations under section 38(1).

36 Conditions requiring waivers or indemnities to be provided, including conditions requiring—

- (a) the holder of a spaceflight licence, and
- (b) any person with whom the holder of the licence makes contractual arrangements in connection with the carrying out of activities authorised by the licence (other than an individual taking part in spaceflight activities in a role or capacity prescribed under section 17(1)),

to enter into reciprocal waivers of liability in respect of any injury or damage resulting from the carrying out of those activities."

Licences issued under the Outer Space Act 1986 may also contain conditions relating to insurance.

Examples of conditions in licences relating to insurance

7.2 It is the Government's intention that every operator licence should include a condition that a licensee must not carry out any spaceflight activities, or associated activities from and including launch authorised by the operator licence, unless the licensee has an insurance policy in place that meets specific requirements (unless a waiver of insurance is applied). These requirements differ by licence type.

7.3 In the case of an **operator licence** (launch operator, return operator and orbital operator), the policy must insure:

- the UK Government and the persons and bodies listed under <u>section 36(2)</u> of the Act against any claims in respect of damage or loss arising out of or in connection with the spaceflight activities authorised by that licence
- the operator against any liability which may be incurred by it in respect of injury or damage¹⁷ to persons or property under <u>section 34(2) of the Act</u>, subject to the specified limit on the amount of the operator's liability
- the operator against any third-party liability which may be incurred by it in respect of the death of or bodily injury to any person or damage to property not covered by section 34(2), subject to the specified limit on the amount of the operator's liability

¹⁷ See section 69(1) for the definition of "injury or damage".

- the operator against any obligation to indemnify either the UK Government or the listed persons and bodies under section 36(2), subject to any limit on the amount of the operator's liability
- 7.4 For all licensees, the insurance policy must have a limit of at least the value as determined by the MIR or the in-orbit TPL policy against the liabilities above. The policy must also confirm that no circumstances exist entitling the insurer to repudiate or disclaim liability. There may be circumstances (for example if an insured is in breach of the insurance policy conditions or the liability is outside of the terms and conditions of the insurance policy) where this condition on disclaiming liability might not apply.
- 7.5 The MIR will in general be set at a value which could be accommodated by the insurance market. However, if the MIR value was calculated at a very high level in excess of insurance market capacity, or if there were wider insurance market issues, the insurance level may be set at the maximum available on the market at the date of issue of the licence.
- 7.6 The regulator also intends to include licence conditions, specific to each licence, that cover the following principles:
 - the limit of an operator's liability
 - if a licence covers multiple launches, variations of insurance requirements and limit of liability per launch, as permitted by the licence. This will include the concept of the 'MIR envelope'
 - that the licensee will provide the regulator with the relevant insurance policy documents and evidence of payment of premiums as requested
 - that the regulator may assess the insurance and consult with insurance advisors internal or external to Government as necessary
 - that the regulator may require additional insurance to be taken out if the mission fails to meet its objectives (for example, if a satellite fails to reach its intended orbit)
 - that the licensee will not vary any material terms and conditions or scope of the insurance policy relating to the licensed activities or cancel or cause the policy to be cancelled¹⁸ without the prior written consent of the regulator. Most terms and conditions will be standard for the sector and any changes to these will not need to be notified to the regulator by the licensee. Conditions around bringing into use of the satellite will be covered and will not require further approval by the regulator
 - that the licensee must immediately notify the regulator of any event or other occurrence which is likely to give rise to a claim under the insurance policy
 - that the licensee will take all necessary action to ensure that the insurance policy continues in force and is valid and enforceable, and do nothing that would enable the insurer to avoid any such policy

¹⁸ It is noted that policy terms and conditions provide cancellation rights for the insurer. If these are invoked and an alternative policy is not obtained by the licensee, this would be a non-compliance with a licence condition which may result in the revocation or suspension of the licence and/or make the licensee liable to the full claim in the event of an accident involving third parties.

- 7.7 Examples of how these may be reflected in a licence can be found in the current guidance on the OSA licence application process. 19
- 7.8 The regulator will also include licence conditions requiring reciprocal waivers of liability as appropriate for the licence in question, as provided for in condition 36 of Schedule 1 of the Act.
- 7.9 The regulator may also include further licence conditions to cater for specific issues relating to the individual licence.
- 7.10 If these conditions are not met, the regulator can suspend or revoke the licence.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/744342/Example_of an Outer Space Act License Updated September 2018 002 .pdf

Section 8: Baseline requirements for third party liability insurance policies

- 8.1 The regulator expects that a TPL policy will include a number of minimum requirements. The regulator will assess the policy to ensure that the policy meets the licence conditions, in particular that the amount of insurance is as required in the licence and that all the parties to the policy have been included as named or additional insureds. The regulator will assess the following:
 - coverage
 - named / additional insureds
 - terms, conditions and exclusions
 - limit of liability / sum insured
 - policy period
 - coverage period
 - deductibles
 - settlement of loss by the UK Government
 - cancellation provision
 - recovery of launch vehicle
 - legal costs

Type of TPL insurance policy required covering multiple launches annually

8.2 If the insurance policy is to cover a number of launches annually (if this is permitted within a licence), the regulator would expect that the operator would take out a declaration policy. This means that the details for each launch are declared separately as endorsements to the policy, setting out the specific details for each launch (i.e. payloads, sums insured, named insureds etc.).

Regulation of insurance policies and markets and rating of insurers Market regulation

8.3 For an insurance policy to be acceptable to the regulator, it must be taken out with an insurer that is suitably regulated. In the UK, such insurers will be regulated by the Financial Conduct Authority and/or the Prudential Regulation Authority. Where insurance is placed in another market such as France or the USA, that market should be similarly regulated and the regulator may wish to see evidence of this.

Market security and financial ratings

8.4 Insurance must be placed through reliable brokers and insurers to provide assurance to the regulator that the sum insured can be met in the event of a claim and that the insurer meets certain financial and governance standards. The regulator will therefore assess the market security of the insurer through which the insurance is placed. A licensee's insurance broker can provide a further assessment using its own market security standards before the policy is taken out.

Section 9: Documents to be submitted to the regulator

At application

- 9.1 When applying for a licence (or if a change in licence conditions is required for example in cases where a licence covers multiple launches), an applicant must be able to demonstrate that insurance will be available to cover the proposed operations. The applicant must provide the regulator with copies of the documents listed in paragraph 9.4 as proof that it either holds (or, in the case of those carrying out associated activities, has access to) the level of insurance required for the proposed activity (further information can be found in the <u>regulators licencing rules).</u> These must be provided before the licence can be issued. These documents can be provided:
 - at the time of application for a licence
 - before the licence is granted, or
 - before an amended licence condition is applied
- 9.2 The regulator will decide which approach under paragraph 9.1 is to be taken with the applicant / licensee.
- 9.3 The regulator will require proof of engagement with an insurer and evidence that a proposed operation is insurable with the application and will also discuss at pre-application the level of engagement with insurers. The documents listed in paragraph 9.4 must then be provided to the regulator as per the agreed process in paragraph 9.1, once the insurance amount has been determined.
- 9.4 The documents below must be provided to the regulator within the timeline set out in paragraph 9.5 below. A licence will not be valid unless such documents are provided to and agreed by the regulator, in accordance to the approach agreed in 9.1:
 - Insurance certificate (unredacted)
 - Signed policy wording (unredacted)
 - Schedule of security (underwriter list)
 - Any amendments or endorsements to the policy
- 9.5 Applicants are encouraged to provide these documents to the regulator as early as possible. Applicants must provide them *no later than* four weeks prior to the date by which the licence is required.
- 9.6 A broker certificate can accompany the documentation above to demonstrate that the insurance has been placed. However, this will not be sufficient on its own to demonstrate that the requirements for insurance have been met.
- 9.7 The regulator may ask for further information to help facilitate its review of the insurance requirement, including asking for copies of the information on risk the applicant provided to the insurer to help determine the level of risk of the mission.
- 9.8 Certified copies of insurance and indemnity arrangements or, if not available at the time the application is submitted, evidence of engagement with insurers and/or other parties on insurance

and indemnities and proposals for such arrangements (N.B. the regulator understands that certified copies of insurance and indemnity arrangements may not be available at the time the application is submitted, but please note that it will send a request for the applicant to produce these documents during the licensing process as it will not be able to grant a licence until it has seen and is satisfied with them).

9.9 The regulator also notes that for certain licence types (for example spaceport, range control, procuring a launch), insurance requirements can be satisfied by being named as an additional insured on a policy. In such cases, the relevant insurance policy may not be available at the point at which a licence may be granted. In these cases, the granting of such a licence would not be dependent on receipt of the insurance documents unless available at the time, although the operator will need to set out the proposed arrangements with respect to the insurance as part of the application process.

Insurance renewal

9.10 Where insurance needs to be renewed due to ongoing licence conditions, the same documents as above will need to be provided to the regulator. These documents will need to be provided at least four weeks before the current insurance cover is due to expire. If a licensee fails to produce the documentation within this timescale, the licensee may be in breach of the licence condition and the licence could be suspended or revoked.

Section 10: Additional insurance considerations for launch operations and associated activities

10.1 In addition to pre-launch insurance and employer liability insurance mentioned above, operators may also wish to take out the following types of insurance based on their commercial needs.

Sub-orbital operations

10.2 The liability insurance requirement for sub-orbital launches and air-launched rockets will be set using the MIR approach.

10.3 For sub-orbital launches licensed under the Act, launch operator licensees should consider including the carrier aircraft within the TPL policy. The Act contains provisions which can limit the third party liability which would be applicable to a carrier aircraft.

10.4 It is not possible to limit liabilities imposed for carrier aircraft under existing aviation law in relation to those taking part in spaceflight activities, if that carrier aircraft is also used for air transport purposes i.e. to carry air passengers or cargo whilst it is being used for spaceflight activities.

10.5 If a policy is required to cater for this, details of the insurance requirements can be found on the CAA website www.caa.co.uk/Commercial-industry/Airlines/Licensing/Requirements-andguidance/Insurance/

10.6 While detailed TPL coverage terms and conditions are not mandated by the regulatory authorities (e.g. CAA), there are standard terms used in the aviation insurance market and these may differ from those used in the space insurance market. For launch from the UK, only terms used on the London market will be accepted.

10.7 Aircraft policies usually offer hull, spares and liability insurance under the same policy. The regulator will expect the policy taken out to cover the following points:

- the coverage will be sufficient to pay all sums which the Insured would become legally liable to pay as damages for Bodily Injury or Property Damage caused by an Occurrence and arising out of or in connection with the Insured's operations. The insured's operations may be specifically defined
- there will be no deductible applied for the TPL risk
- the amount of insurance will be at least at the level of that set out in the licence
- declaration of each launch under an aviation policy may not be required to the insurer, but
 this will depend on the frequency of flights and if there are any material changes between
 the characteristics of each flight. For coverage for certain types of sub-orbital launch, it is
 likely that insurers and the regulator will request an indication, prior to inception, of the
 expected number of flights or flight-hours, with opportunity during the policy period to adjust
 for this
- the policy period will normally be 1 year
- the policy will include the details of the named Insured (which will normally be the launch operator)
- the UK Government must be listed as an additional insured on the policy. While the regulator is not normally an Additional Insured on aviation policies unless they are directly involved

- with certain aircraft operations, for spaceflight activities the CAA **must** be included as an additional insured. Lessors, airport, air navigation service, ground handlers, maintenance companies can be included
- standard insurance market terms and conditions, as commonly accepted in the insurance market for aviation hull and liability risks, will apply
- a Cancellation Provision must be included. While not standard in aviation policies, the
 regulator will expect a requirement to be included in a policy for it to be notified in the event
 of cancellation of or change to policy coverage.

IMPORTANT

A licensee must not cancel or cause to be cancelled a policy without the agreement of the insurer or without notifying the regulator. If a licensee cancels a policy, the licensee must ensure that another suitably acceptable policy is taken out to cover the period immediately following the end date of the current policy and inform the regulator for its agreement.

10.8 Some European regulators require the use of licensed insurers in the aviation market. While the CAA does not set a minimum financial security requirement for insurers for aviation activity generally, in line with the expectations for vertical launch activities, the regulator will expect the insurance to be taken out with an authorised insurer. A minimum security rating may be specified in aircraft lease agreements.

10.9 As per space policies, the laws of England and Wales will apply (and UK Arbitration if required) for a UK launch operator policy.

10.10 As this is an emerging and evolving insurance product and given the legal implications in terms of applying a limit of liability to spaceflight activities involving carrier aircraft, the regulator and Government will work with potential applicants and insurers to develop insurance arrangements that meet the UK's legal requirements.

Spaceport operations

Types of insurance that operators may consider taking out

- 10.11 If the spaceport is at a CAA-licensed or certified aerodrome, it will already be required to hold insurance as required as part of its approval (including any requirements on airside liability insurance).
- 10.12 Spaceport operators may wish to consider taking out insurance to cover the following risks related to spaceflight activities:
 - property damage to ground infrastructure
 - weather damage / natural disasters
 - property damage to aircraft/spacecraft
 - environmental/pollution damage
 - security risks
 - ground handling (and other contractors') risks

Range control operations

Types of insurance that operators may consider taking out

10.13 Range control service providers may wish to consider taking out insurance to cover the following risks:

- premises insurance
- products liability insurance

Sea launch

This section provides additional guidance on insurance where a launch operator is planning to launch from a ship at sea. Further details on the specific arrangements for licensing launches at sea can be found in the guidance 'Applying for a licence.'

10.15 In terms of insurance requirements, this will be dependent upon the Act under which the operation is licensed. If it is under the Outer Space Act 1986, the insurance and liabilities requirements for that Act will apply (i.e. €60m for procuring a launch). If the licence is issued under the Space Industry Act, the MIR calculation will apply for the launch. It should be noted that the launch licence will commence from the point of launch of the launch vehicle, rather than from the point of the ship leaving the port. As such, the MIR would calculate the insurance from the point of launch and any period prior to this would be covered by prelaunch insurance (which will not be mandated for sea launch, in line with other types of launch).

Section 11: Cross waivers of liability

- 11.1 As noted above, <u>Schedule 1</u> to the Act sets out a list of conditions that may be included in licences. This is an indicative list of possible licence conditions and is not exhaustive. Paragraph 36 provides for conditions requiring waivers or indemnities of liability for injury or damage to be included within the operator licence.
- 11.2 Waivers and indemnities essentially relate to the contractual allocation of risk between parties engaging in spaceflight and associated activities. The intention of waivers and indemnities in this context is that the parties involved in spaceflight and associated activities may agree to bear their own losses.
- 11.3 Conditions will therefore be included in licences relating to waivers and indemnities on a case-by-case basis, reflecting the specifics of each licence. Each licensee may agree to waive their right to claim against the parties they are contracting with in connection with the spaceflight or associated activity. This may be a condition in a licence for the launch operator, the orbital operator, the spaceport operator and the range control service provider.
- 11.4 To manage claims that may be made by one party's employees, contractors, sub-contractors and their employees against the other party, the condition may also require both parties to indemnify the other party for all costs or expenses incurred by them and that therefore such parties cannot make a strict liability right of claim under regulation 218. All of the relevant parties to the mission should be covered by the scope of the cross waiver (i.e. the parties must include not only the immediate contractual parties the waivers must flow down to include all contractual parties including contractors and subcontractors and other related parties).
- 11.5 It should be noted that any such condition or waiver will not apply to individuals taking part in spaceflight activities in a role or capacity prescribed under section 17(1) of the Act.
- 11.6 Applicants and licensees should contact their legal advisers to discuss wording in proposed cross waivers to ensure compatibility with UK legislation and that all the relevant parties are covered by the cross waiver.

Section 12: Waiver of insurance requirements (Space Industry Act 2018 and Outer Space Act 1986)

12.1 The regulator may waive the requirement to hold third party liability insurance if it deems it appropriate. The waiver will only apply to missions that are considered by the regulator to be "low risk" and only in relation to in-orbit activities. The low-risk assessment will take into account any assessment carried out as part of the traffic light system (TLS) for the licensing of in-orbit operations.²⁰

12.2The waiver is discretionary. The regulator may apply the waiver where a mission is classed as "low risk" on the basis of a risk assessment and is to be deployed from the International Space Station or into an orbit lower than the International Space Station. Such missions would require a 'green' rating under the TLS. Further details are outlined below.

Requirements for applying for a waiver

12.3 To qualify for a waiver, the following criteria will apply:

- the mission will have received a 'green' rating as part of the TLS assessment
- the launching of a satellite and any subsequent deployment from the ISS must be managed by an established provider with proven technologies / techniques for ejecting objects safely and reliably into orbit
- for deployment from the ISS, there must have been a satisfactory independent safety review conducted by NASA
- the satellite must have passed all other licensing criteria, including but not limited to a satisfactory technical and financial assessment
- there must be no other concerns or risks that would increase the likelihood of claims against the UK Government for loss or damage under the Liability Convention arising from the licensed activity

²⁰ For details of the TLS, please see the <u>Guidance for orbital operator licence applicants and licensees</u>

Section 13: Use of securities and other alternatives to insurance

- 13.1 The Space Industry Act 2018 allows licensees to use securities and other alternatives to insurance. However, no further regulations are being proposed in relation to this.
- 13.2 During the licensing process set out in separate guidance, the regulator and its advisors will assess any information submitted. If special conditions are required for a particular licence (e.g. that a parent guarantee be in place when a licence is granted to a subsidiary company), these will be explained to the applicant.
- 13.3 The Government's further review of liabilities and insurance will also look at other forms of financial security and this guidance may be subject to further revision to reflect the outcome of the review.

Section 14: How to make a claim

14.1 In the event of a claim arising against the UK Government under the obligations under the UN Liability Convention, the claim is made against the launching State (or one of the launching states if there is more than one) by the state of the affected party. This is done through diplomatic channels, so this can be either:

- state to state (where diplomatic relations are in place)
- through a third state (where the countries concerned do not maintain diplomatic relations),
 or
- through the Secretary General of the United Nations if both states are members of the United Nations

14.2 Where such a claim is made against the UK Government, the relevant operator will be required to meet the claim to the level of any limit of liability included in the relevant licence.

14.3 Where a claim is made against an operator under <u>section 34 of the Act</u> for claims for damages not covered by the UN Liability Convention e.g. by third parties as defined under the Space Industry Act 2018, (through their appointed solicitor or through the UK Government), the operator must pay compensation up to the limit of liability set out in the relevant licence.

Annex A: Terms used in this guidance

<u>Aggregate</u> – The maximum amount that an insurer will pay out in total within the policy period (i.e. annually). Note that, whatever the aggregate, the policy may also have limits for each separate claim.

<u>Additional insured</u> – An individual or entity specifically named and added to an insurance policy to provide the same protections as the named insured individual or entity.

<u>Deductibles</u> – A specified amount that must be paid before an insurance company will pay a claim.

<u>First parties</u> – The persons or organisations directly involved in the licensed activities. This will cover such entities as the owner and operator of the spaceport, the launch operator, the satellite manufacturer, the satellite owner and associated parties.

Named insured – The person or organisation who the insurance covers.

Ordinary liability - Liabilities that arise in common law e.g. negligence.

<u>Per occurrence (or any one occurrence)</u> – This refers to the maximum amount that an insurer will pay for damages arising from a single event or occurrence where third party damage has been caused. This may or may not be subject to an aggregate. The maximum amount is available to settle any future claims during the policy period providing each claim arises due to a separate occurrence.

<u>Standard mission</u> – A mission involving a single satellite, proven platform and recognised operational processes.

<u>Subrogation</u> – Where someone takes over a claim made by another person. For example, if an individual has a problem with a broken item that is the responsibility of someone else, the insurance company may pay to fix the item and will then look to recover the costs from the person responsible for the item.

<u>Third party liability</u> – Injury to a person who is involved in a claim but is neither the insurer nor the policyholder, or damage to such a person's property. In the case of spaceflight, it refers to all entities not involved in the launch or in-orbit activities (i.e. the general public and others not considered to be first parties to the launch or in-orbit activities).

<u>Indemnity</u> - indemnified party should be restored to the same financial position after the loss that the party was in immediately prior to the loss; but an indemnified party should not be able to profit to any extent from the event which generates that loss; nor should the indemnified party be left in a worse financial position after the loss.

	Licence type			
	Launch operator (UK launch)	Orbital operator	Spaceport (UK)	Range control service provider
	Liable	Liable	Not liable	Not liable
_	MIR.	MIR - set at the same amount as for launch operator.	MIR - set at the same amount as for launch operator.	MIR - set at the same amount as for launch operator.
Д	Launch policy (launch operator buys) - named insured	Launch policy (launch operator Launch policy - additional insured buys) - named insured	Launch policy - additional insured	Launch policy - additional Launch policy - additional insured insured
D	From point of launch to end of licence.	From point of launch to start of in-Only for periods covered by the orbit coverage.	Only for periods covered by the launch policy.	Only for periods covered by the launch policy.
	Liable	Liable	Not liable	Not liable
_	As per launch policy. TBC re upper stages etc. in-orbit.	€60m - standard missions; Higher for N/A higher risk missions; waived for lowest risk cubesats.		N/A
Ь	TBC beyond initial period covered by launch policy.	In-orbit policy (satellite operator N/A buys) - named insured		N/A
D	_	To the end of licensed activity / N/A passivated and is positioned satisfactorily.*		N/A
_	Liable	Liable	Not liable	Not liable
_	TBC	TBC	N/A	N/A
Д	твс	твс	N/A	N/A
D	TBC	TBC	N/A	N/A

Space Industry Act Launch including procuring a launch)	In-orbit including unplanned re- entry)	Planned re- entry
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Appendix - Liability and insurance requirements by operator type under the Space Industry Act.

L – whether liable under section 34 and section 36 note – this should be read as not generally taken to be liable in the normal course of events]; I – How the insurance is calculated; P - How covered by an insurance policy; D - Duration of cover required (this will be defined in the licence but general approach included here); N/A - not applicable

each mission and may vary from the above. It is important to engage with the regulator to fully scope out the liabilities etc. for each operator. This table may Operators should note that the table above sets out the liabilities and insurance requirements under general scenarios. The requirements will be specific to *The first part of the in-orbit phase for satellite operations may be covered by the launch policy. be subject to amendment following the wider review.