Fact Sheet

The UK Space Agency's New Requirements for In-orbit Third-Party Liability Insurance

On the 1st October 2018, the UK Space Agency ("the Agency") introduced a new approach to how it sets its requirements for third-party liability insurance for in-orbit activities.

This fact sheet supplements the information provided on the Outer Space Act (OSA) Licensing website. Any further enquiries should be directed to regulation@ukspaceagency.gov.uk.

Key insurance terms

'Any one occurrence': The 'any one occurrence' limit (sometimes referred to as the 'per-occurrence amount') is the maximum that an insurer will pay out for **each event** where third-party damage has been caused. This may or may not be subject to an aggregate.

'Aggregate': The aggregate is the maximum that an insurer will pay out **in total** within the policy period. For example, an insurance policy of "EUR 500 million any one occurrence with EUR 1 billion in the aggregate" means the insurer will not pay out more than EUR 500 million for any one occurrence, *and* no more that EUR 1 billion in total for that policy period.

The proposed new TPL insurance requirements

1. The first key change under the new approach to TPL insurance requirements is a **change from a per-satellite requirement to a per-occurrence requirement**. This aligns regulatory requirements with standard practice in the insurance market, and allows the Agency to adapt its insurance requirements to changes in the space sector. The shift means that, for operators of more than one satellite, the Agency may allow all of that operator's satellites to be covered under a single TPL insurance policy. In essence, this would function as a fleet TPL insurance policy.
2. **For standard missions** (see definition on the licence application guidance page and in Q&A section), the TPL insurance requirement would remain the same as it presently is – EUR 60 million. Where an operator has more than one standard mission, the Agency may allow all of its standard-mission satellites to be **covered under a single EUR 60 million per-occurrence insurance policy**. After a certain number of satellites have been launched by that operator, the Agency may offer the operator the **option to add an aggregate** to their per-occurrence TPL insurance policy.

For **higher-risk licensable missions** (see definition above), the Agency **may require a higher per-occurrence and/or a higher aggregate**, depending on the risks of each mission. These requirements will be considered on a case-by-case basis, and set following an appropriate risk assessment. The Agency will take into account the capacity of the insurance market when setting its insurance requirements.

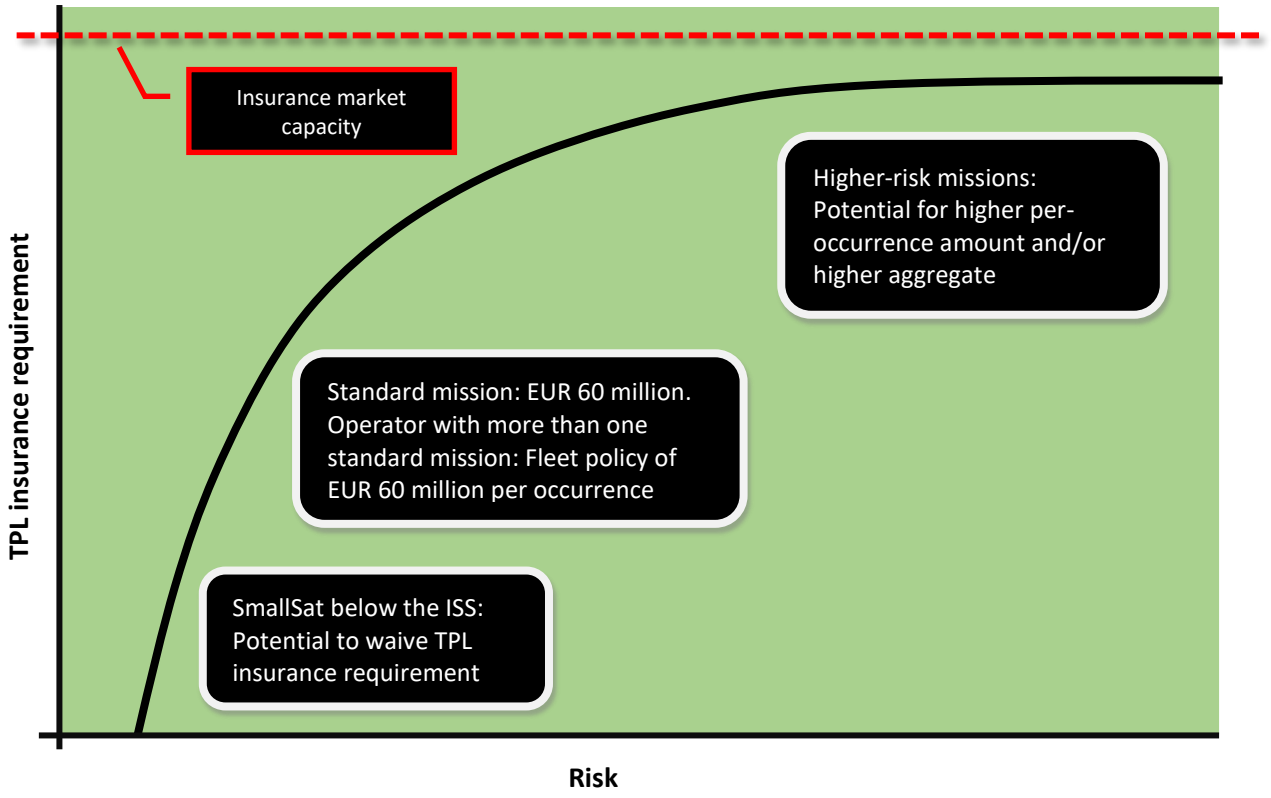
For **low-risk SmallSat missions deployed from the ISS or otherwise launched to an operational altitude below that of the ISS,** the Agency **may waive the TPL insurance requirement**. A low-risk satellite at these very low, sparsely-populated altitudes, with an orbital lifetime of less than a year and with few high-value assets nearby, would, in most cases, carry a negligible risk of third-party damage.

The above points should be taken as indicative only. The Agency will, through its risk assessment procedures, determine the minimum amount required for both the per-occurrence level and, where appropriate, the aggregate level. In setting its TPL insurance requirements, the Agency will consider, amongst other factors:

- the heritage and reliability of the technology;
- the orbital parameters;
- the contingency plans and redundancy of the planned mission;
- the manouevrability of the satellite and the capacity for it to be tracked;
- the estimated value of satellites in nearby orbits;
- the orbit-raising and de-orbiting plans, including the value of satellites that may be encountered during the procedures;
- the operational practices followed by the operator;
- the performance of similar space systems on orbit.

The licence applicant will be kept closely informed about the likely TPL insurance requirements for their mission.

Risk spectrum of licensable missions, with examples (**not exhaustive**) of mission types and their possible corresponding TPL requirements (**subject to case-by-case risk assessment**)
Not to scale.



TPL insurance requirements: Links to the indemnity cap

1.1 The Agency has discretion regarding where to set the limit on the operator's liability to indemnify the government for claims made against the government, so long as a limit is stated in each licence. Considering the increasing diversity of emerging space missions and the risks that attach to them, this flexibility is crucial.

1.2 The Agency plans to continue to set the indemnity limit for each licence. Currently, this means **we set the indemnity limit for each satellite**, as we issue a separate licence for each satellite. Applicants will continue to be kept closely-informed about the likely level of the indemnity cap for each mission.

1.3 **The below table shows indicative TPL insurance requirements for a variety of mission types, along with their corresponding indemnity limit**.

2 Indicative TPL insurance requirements

2.1 The following table provides examples of missions with the TPL insurance requirements that the Agency may place on the operator. **These are indicative only, and are wholly subject to a full and thorough risk assessment at application stage**.

<table>
<tr><th>Traffic Light rating</th><th colspan="2">Example mission type (not exhaustive)</th><th>Indicative TPL requirement</th><th>Indicative limit to operator's indemnity to Government, set in each licence</th><th>Explanatory notes</th></tr>
<tr><td rowspan="5">Green</td><td>Lowest risk</td><td>Low-risk SmallSat deployed from or below the ISS to a lower altitude</td><td>It is envisaged that, in most cases, the TPL requirement for this type of mission would be waived.</td><td>EUR 60 million (per licence as each satellite is licensed individually)</td><td>Satellites operating at an altitude below that of the ISS present a very small third-party risk: the orbital lifetime is less than a year and the area is sparsely populated with valuable assets.</td></tr>
<tr><td rowspan="4">Standard missions</td><td rowspan="4">'Traditional' satellite in GEO, using proven and reliable technology

Satellite with proven propulsive system sent into LEO or MEO, using proven and reliable technology

Satellite without propulsive system, using proven and reliable technology, and with operational altitude that allows the satellite to de-orbit in line with current best practice</td><td>EUR 60 million per occurrence</td><td>EUR 60 million (per licence as each satellite is licensed individually)</td><td rowspan="4">Where there is a single satellite that represents a very low and well-characterised third-party risk, the TPL requirement and indemnity limit would remain the same as it currently is.

Where there is more than one satellite operated by the same operator, and where all satellites are standard missions, the Agency will allow for all satellites to be covered under a 'per-occurrence' insurance policy. The Agency may also allow for a 'per-occurrence and in the aggregate' policy to be taken out by the operator, dependent on the risks of that operator's missions.</td></tr>
<tr><td colspan="2">Operators of more than one satellite, where each satellite falls in this 'standard mission' risk band</td></tr>
<tr><td>EUR 60 million per occurrence with the option given to the operator of adding an aggregate to the insurance policy once n^{th} satellite is launched</td><td>EUR 60 million (per licence as each satellite is licensed individually)</td></tr>
</table>

Traffic Light rating	Example mission type (not exhaustive)	*Indicative* TPL requirement	*Indicative* limit to operator's indemnity to Government, set in each licence	Explanatory notes
	Higher risk: Mega constellation in LEO	Per-occurrence amount with or without an aggregate, subject to insurance market capacity	Determined on a case-by-case basis	The entire constellation would be covered by a single TPL insurance policy, covering occurrences of third-party damage involving any of that operator's satellites. The per-occurrence and aggregate amounts would depend on the CONOPs of the mission.
	Higher risk: Other higher-risk licensable missions	Per-occurrence amount with or without an aggregate, subject to insurance market capacity	Determined on a case-by-case basis	The TPL insurance requirements and the level of the operator's indemnity to the government will be decided on a case-by-case basis for higher-risk licensable missions.
Missions not rated as 'Green' in the Traffic Light System assessment				
Amber	A SmallSat mission to be conducted at an altitude above 650 km which, with the addition of de-orbit capability, could provide assurance of reducing orbital lifetime to below 25 years	Would not license if mission is not re-rated as 'Green'	N/A	In this case, the granting of a licence would not be possible unless the operator ensured that the satellite could be de-orbited within the time frame recommended by international guidelines.
Red	Satellite launching into an orbit above 650km with no propulsion or proven de-orbit technologies	Would not license	N/A	In line with international guidelines, all satellites launched to LEO should actively or passively decay within 25 years, and, ideally, much less. A satellite at or above this altitude without propulsion or proven de-orbit technologies would not meet this

Traffic Light rating	Example mission type (not exhaustive)	*Indicative* TPL requirement	*Indicative* limit to operator's indemnity to Government, set in each licence	Explanatory notes
				requirement. As a responsible regulator, the Agency would therefore not license such a mission. Note that this does not include interplanetary missions.
	Mega constellation without a robust and credible sustainability plan	Would not license	N/A	The Agency cannot license a mission that may result in numerous defunct satellites being left in LEO for a long period of time. This would not be in line with the UK's international obligations to minimise space debris and collision risk, in order to ensure the accessibility of space for future generations.