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**Committee on the Peaceful  
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**Scientific and Technical Subcommittee**  
**Fifty-ninth session**  
Vienna, 7-18 February 2022  
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**Long-term sustainability of outer space activities**

**United Kingdom Update on its Reporting Approach for the  
Voluntary Implementation of the Guidelines for the Long-  
Term Sustainability of Outer Space Activities**

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<sup>1</sup> A/AC.105/C.1/L.392



Fifty-ninth session

7-18 February 2022

## **United Kingdom Update on its Reporting Approach for the Voluntary Implementation of the Long-Term Sustainability Guidelines of Outer Space Activities**

### Foreword

1. Following a decade of hard and exceptional work, the United Nation's Committee on the Peaceful Uses of Outer Space Scientific and the Technical Subcommittee successfully adopted the preamble and 21 guidelines for the long-term sustainability of outer space activities at the Committee's 61st session, in 2018. The UK joined consensus on a Committee report encouraging parties to take measures voluntarily to implement the guidelines to the greatest extent feasible and practicable. The UK expressed its strong belief in the value of member states not only implementing the guidelines, but in also sharing the approaches, practices and lessons learnt in doing so. Annual UK conference room papers since 2018 have demonstrated our commitment to tangibly implementing the guidelines in our national capacity.
2. Accordingly, the UK presented its approach to implementation reporting at the 57<sup>th</sup> (A/AC.105/C.1/2020/CRP.15) and 58<sup>th</sup> sessions (A/AC.105/C.1/2021/CRP.16) of the STSC and we are pleased that other UN Member States have followed this practice. A copy of the draft template for capturing the implementation of the guidelines is provided in Annex 1.
3. The UK is now pleased to provide its 2022 update to this proposed reporting format in time for the 59<sup>th</sup> session of the STSC, under Annex 2 below.
4. This year has been an important and eventful one for the UK in regulating outer space activities and in ensuring that the LTS Guidelines form an integral part of its approach. Highlights since the previous release of the CRP in April 2021 include:
  - Commencement of the Space Industry Regulations which set the framework for licensing launch and orbital activities from the UK;
  - The launch of the new UK Spaceflight Regulator within the CAA who will be responsible for licensing launch and orbital activities;
  - Completion of Phase 1 of the UK-funded project with UNOOSA titled "Awareness-raising and capacity-building related to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities". Phase 1 saw UNOOSA lead three expert events

with industry, regulators and space agencies to exchange good practice and lessons learned. In terms of concrete outputs, a series of 45 implementation case studies, infographics and an accessible version of the LTS guidelines in all 6 official UN languages were also published.. For more information on these, see <https://spacesustainability.unoosa.org/>

- Phase 2 of the UK-funded project with UNOOSA titled “Awareness-raising and capacity-building related to the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities” began in December 2021. Phase 2 sees UNOOSA conduct over 40 interviews with Member States of COPUOS to identify challenges associated with implementation, which will help identify future capacity-building requirements. For the benefit of all stakeholders, UNOOSA will also produce anonymised report of its findings.
5. The UK continues to welcome the opportunity to discuss the practicalities of implementation of the 21 agreed long-term sustainability guidelines with other member states. Through its voluntary implementation the UK recognises that under the themes of the guidelines a number of different approaches can be adopted within their implementation. Therefore, significant participation in the sharing of implementation practices will allow member states to uncover the breadth of approaches that could be adopted to implement the 21 agreed guidelines and allow common practices to be uncovered, both to inform capacity building measures and ensure coherency in our approach to implementation.
  6. Voluntary implementation of the guidelines, to the greatest extent feasible and practicable, will also reveal challenges and gaps across the current guidelines which will be used to inform further work such as the need to develop supporting information on implementation, for example :
    - The need to consider additional multilateral mechanisms or groups for communication or coordination : A number of the guidelines discuss the need for “appropriate communication and consultation mechanisms” (A.3.5) or the “exchange, on a voluntary basis and as mutually agreed, relevant information on space objects” (B.1.3). There is a need to determine what forums or mechanisms are appropriate, accessible and useful to those engaged in these activities referenced in the guidelines and this can only be done through coordinated capture and discussion of implementation practices.
    - The need to develop or recognise common international standards : A number of the guidelines point towards the need to “develop common international standards” (B.5.4, B.7.4) or highlight the consideration of existing standards (B.1.5, B.2.1, B.8.2). There is a need to develop a common understanding of the type of standards or guidelines that are being adopted. In areas where existing standards or guidelines are thought not to exist

there is a need to share insights into existing or on-going activities across Governments, academia and industry to avoid duplication of effort. Sharing of common practices in implementation and how member states are coordinating their efforts will begin to highlight good practice and coherency in our efforts. Again, this can only be done through coordinated implementation of the guidelines to the greatest extent feasible and practicable.

7. The UK looks forward to contributing to the Working Group on the Long-term sustainability of Outer Space and finalising an approach to implementation reporting once the new LTS WG has been established.

### **ANNEX 1 : Template for capturing the implementation of the guidelines**

The template below provides an overview of the template identified by the UK and guidance for completing the sections.

<b>Guideline Reference</b>	<b>Guideline title or summary</b>	<b>Nation</b>
<b>1. Thoughts or approach to implementation</b>	<i>This should be used to provide either the current thoughts on how the member state intends to consider implementing this guideline or, if already underway, the current approach to implementing this guideline.</i>	
<b>2. Current progress and/or proposed future activities</b>	<i>This should be used to provide information on the current progress towards implementing the approach mentioned in 1. and/or future activities to either begin, continue or extend the implementation this guideline.</i>	
<b>3. Experiences, challenges and lessons learnt</b>	<i>This should be used to provide information on any relevant experience on the practical implementation of this guideline, including : any new practices or procedures to enhance implementation, or details of lessons learnt, or challenges encountered or overcome.</i>	
<b>4. Comments on specific needs for capacity building necessary to support implementation</b>	<i>This should be used to provide information or comments on specific capacity building requirements that member states may have in order to assist in the implementation of this guideline.</i>	

## ANNEX 2 : UK Update on the Implementation of Long-term Sustainability Guidelines 2022

### A. Policy and regulatory framework for space activities

<b>A.1</b>	<b>Adopt, revise and amend, as necessary, national regulatory frameworks for outer space activities</b>	<b>United Kingdom</b>
<b>Thoughts or approach to implementation</b>	<p>The Space Industry Act 2018 (SIA) is being used as an opportunity to update and further develop the UK regulatory regime for authorising outer space activities. The Act will provide the relevant framework for licensing launch, return, orbital, spaceport and range control activities from the UK and ensure that such activities are carried out safely, securely, sustainably and in line with the UK's international obligations.</p> <p>The Outer Space Act 1986 (OSA) will continue to govern space activities carried out by UK nationals overseas.</p> <p>The UK has established a new Space Regulator, sited within the Civil Aviation Authority (CAA), which has taken over from the UK Space Agency (UKSA) as the independent safety regulator for UK space activities.</p>	
<b>Current progress and/or proposed future activities</b>	<p>The Regulations which underpin the SIA were approved by Parliament and came in force on 29 July 2021. Associated guidance documents were also published.</p> <p>The new spaceflight regulator, sited within the CAA, was stood up on 29 July 2021 when the Regulations came into force. The CAA is the independent regulator for all activity under both the SIA and the OSA, and it is open to receiving spaceflight licence applications.</p> <p>At the end of 2021, the Spaceflight Safety and Regulatory Council (SSRC) was established to keep the SIA and Space Industry Regulations 2021 under review.</p> <p>The UKSA will continue developing its orbital regulatory requirements to ensure regulation keeps pace with innovation in the sector.</p>	
<b>Experiences, challenges and lessons learnt</b>	Both activities are still ongoing.	
<b>Comments on specific needs for capacity building necessary to support implementation</b>	The UK has had significant experience in developing a new regulatory framework, and are very happy to discuss our experiences with nations considering doing the same.	

<b>A.2</b>	<b>Consider a number of elements when developing, revising or amending, as necessary, national regulatory frameworks for outer space activities</b>	<b>United Kingdom</b>
<b>Thoughts or approach to implementation</b>	The current UK licensing process explicitly assesses the potential risks to people, property, public health and the environment for in-orbit operation and space object re-entry, and this will soon also include assessment of launch activities under the SIA.	

	<p>Safety assessments carried out by the Regulator under the Outer Space Act 1986 take into account international best practice, technical standards (incl. ISO and ECSS), and guidelines (incl. IADC). International best practice, such as the international Space Debris Mitigation guidelines, have also been incorporated into the SIA.</p>
<p><b>Current progress and/or proposed future activities</b></p>	<p>The OSA and the SIA jointly ascertain UK jurisdiction over launch, return and orbital activities, as well as associated sites, such as mission management facilities, spaceports and range control. The two Acts regulate activities located within the UK and those exercised by UK nationals overseas. The OSA is currently in effect. A public consultation on the more detailed regulations underpinning the SIA concluded in March 2021 and came into force on 29<sup>th</sup> July 2021. This was also the date on which the Civil Aviation Authority (CAA) became the UK's regulator for spaceflight activities. The CAA licenses orbital activities and ensures that these are safe, secure and aligned to the UK's international obligations. The CAA has also assumed the functions for licensing regimes for launch, return, spaceports and range.</p> <p>The OSA, SIA and the Space Industry Regulations 2021 set out the UK's high-level framework on operator liability and insurance obligations to ensure that the UK meets its international obligations under the UN Treaties, in particular the Convention on International Liability for Damage Caused by Space Objects. This legislation is supplemented by published guidance to provide operators with clarity on the liability and insurance provisions in legislation as well as requirements for insurance policies.</p> <p>The UK Government issued a call for evidence in October 2021 to consider a number of liability and insurance matters raised by the UK's space sector. This includes the use of alternatives to insurance as forms of security to meet an operator's liability obligations and also whether the current fixed limit is replaced by the potential adoption of a variable liability limit, setting insurance requirements for orbital operations based a small number of risk criteria. The review will also take into account the Government's evolving approach to maintaining the sustainability of the orbital environment.</p> <p>The publication of the Government's response to the review will be issued later this year and the UK will provide a further update at the next committee.</p>
<p><b>Experiences, challenges and lessons learnt</b></p>	<p>The UK's non-prescriptive, outcome-based authorisation regimes provide flexibility by design. This flexibility, alongside proactive engagement with the space industry and community will be key to ensuring that the rapid pace of change in technology and operational practice can be adequately taken into account.</p>
<p><b>Comments on specific needs for capacity building necessary to support implementation</b></p>	<p>The UK has had significant experience in licensing activities in orbit and in developing new regulatory frameworks. We are very happy to discuss our experiences with nations considering doing the same.</p>

## B. Safety of space operations

B.2	<p><b>Improve accuracy of orbital data on space objects and enhance the practice and utility of sharing orbital information on space objects</b></p>	<p><b>United Kingdom</b></p>
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<b>Thoughts or approach to implementation</b>	The UK continues to implement this guideline through our Space Surveillance and Tracking (SST) capability.
<b>Current progress and/or proposed future activities</b>	<p>The UK is continuing to invest in our national SST capability, having recently (November 2021) placed new contracts with Commercial sensor providers like Numerica, giving the UK access to more data on objects in orbit and this supplements existing sensor capabilities provided by UK government-owned assets.</p> <p>The UKSA provides satellite collision warning services to government, and is rolling it out a service to commercial operators in 2022.</p> <p>Civil analysts work alongside their military counterparts in the UK Space Operation Centre, liaising with international partners and contributing to the UK Space Agency's support of organisations like the IADC.</p>
<b>Experiences, challenges and lessons learnt</b>	The use of common, internationally recognized standards to enable information exchange, which can be a potential barrier to collaboration.
<b>Comments on specific needs for capacity building necessary to support implementation</b>	The UK welcome the opportunity to discuss collaborative approaches to improving the accuracy of orbital data and enhanced sharing of information.

<b>B.4</b>	<b>Perform conjunction assessment during all orbital phases of controlled flight</b>	<b>B.4</b>
<b>Thoughts or approach to implementation</b>	The UK continues to implement this guideline through our Space Surveillance and Tracking (SST) programme and the NSpoC, and alongside the CAA.	
<b>Current progress and/or proposed future activities</b>	<p>The UK is continuing to invest in our national SST capability, including funding in 2021/22 for thirteen R&amp;D projects, including an AI-based tool which can take autonomous action to avoid a collision.</p> <p>Alongside these investments we are also carrying out projects to understand the UK's SST capabilities. At the next ESA Ministerial meeting the UK intends to continue to invest in ESA programmes which support the development of national capabilities, with a focus on interoperability and standardisation to facilitate collaboration, including with regards to conjunction assessments.</p>	
<b>Experiences, challenges and lessons learnt</b>	There are significant benefits to a shared civil-military approach to conjunction management and SST more widely.	
<b>Comments on specific needs for capacity building necessary to support implementation</b>	The UK welcome the opportunity to discuss collaborative approaches to improving conjunction assessment during all orbital phases of controlled flight.	

## C. International cooperation, capacity-building and awareness

<b>C.1, C.2, C.3 and C.4</b>	<p><b>C.1 - Promote and facilitate international cooperation in support of the long-term sustainability of outer space activities</b></p> <p><b>C.2. - Share experience related to the long-term sustainability</b></p>	<b>United Kingdom</b>
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	<p><b>of outer space activities and develop new procedures, as appropriate, for information exchange</b></p> <p><b>C.3 - Promote and support capacity-building</b></p> <p><b>C.4 - Raise awareness of space activities</b></p>	
<b>Thoughts or approach to implementation</b>	<p>The UK has a strong desire to foster international cooperation between nations to develop a coordinated approach to space sustainability. To achieve this the UK is an active participant in various international and national forums performing research into the space environment, such as the Inter-Agency Space Debris Coordination Committee (IADC).</p>	
<b>Current progress and/or proposed future activities</b>	<p>One route that the UK is taking is by supporting the advancement of the IADC. The IADC is comprised of 13 space agencies who are performing active research into space debris mitigation. The UK contributes to the technical research performed by the IADC which forms the basis of the guidelines and best practice which the committee develops to support and guide sustainable operations by all space actors.</p> <p>In 2020-21 the UK's National Space Innovation Programme provided support to UNOOSA awareness-raising efforts for the LTS Guidelines. These efforts included the establishment of a new UN digital website for Space Sustainability – <a href="https://spacesustainability.unoosa.org/">https://spacesustainability.unoosa.org/</a> , the publication of the LTS Guidelines in the 6 official languages of the UN, an associated awareness-raising campaign and infographics series for members of the public, as well as a series of international events focusing on the implementation of the LTS Guidelines, targeted at regulators, space agencies and industry actors.</p> <p>Phase 2 of the project - December 2021 – March 2022 - UNOOSA will see host a series of 40 interviews with Member States to understand approaches to implementation and associated challenges. The final product will be an anonymised report, which could serve a basis for understanding possible, future capacity-building needs or requirements.</p>	
<b>Experiences, challenges and lessons learnt</b>	<p>It is important that forums include appropriate inputs from public, private and academic sectors to ensure that correct conclusions are made.</p>	
<b>Comments on specific needs for capacity building necessary to support implementation</b>	<p>The UK welcomes the opportunity to discuss approaches to enhance international cooperation and capacity building.</p>	