Broadening Benefit as a Pathway to the Widely Accepted Development of Extra-terrestrial Resources

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Origins of 'benefit' as a concept in space governance

"Desiring to promote energetically the fullest exploration and exploitation of outer space for the benefit of mankind,

Conscious that recent developments in respect of outer space have added a new dimension to man's existence and opened new possibilities for the increase of his knowledge and the improvement of his life,…

1. [The General Assembly] Establishes an ad hoc Committee on the Peaceful Uses of Outer Space … [and requests it to report on] …

(b) The area of international co-operation and programmes in the peaceful uses of outer space which could appropriately be undertaken under United Nations auspices to the benefit of States irrespective of the state of their economic or scientific development, taking into account the following proposals, …"

ARES/13/1348E ,13 December 1958

Outer Space Treaty of 1967

- Preamble: "Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development,"
- ARTICLE I: "The exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind."
- ARTICLE II: "Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."
- ARTICLE VI: "The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty."

Concept of Benefit Continues to Evolve

Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit of All States, Taking into Particular Account on the Interests of All Countries

"5. International cooperation, while taking into particular account the needs of developing countries, should aim, inter alia, at the following goals, considering their need for technical assistance and rational and efficient allocation of financial and technical resources:

(a) Promoting the development of space science and technology and of its applications;

(b) Fostering the development of relevant and appropriate capabilities in interested States;

(c) Facilitating the exchange of expertise and technology on a mutually acceptable basis space among States."

A/Res 51/122, 4 February 1997

Treatment of 'Benefit' in Multilateral Space Initiatives

"Some delegations reiterated the view that the dissemination of data obtained by remote sensing must be subject to prior consent and should be made available freely to the sensed State as an expression of respect for its sovereignty and not be distributed to third parties without its consent. Other delegations were of the view that primary data ought to be available for open dissemination. Some delegations also expressed the view that analysed information was the work product, and the property, of the analyser and therefore could not be treated in the same manner as primary data. Still other delegations expressed the view that the remote sensing data with a certain special resolution should be circulated solely with the consent of the sensed State."

1978 report of the COPUOS Scientific and Technical Subcommittee

1986 Principles Relating to Remote Sensing of the Earth from Space

- Principle II: "Remote sensing activities shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic, social or scientific and technological development, and taking into particular consideration the needs of the developing countries."
- Principle IX: "It [a sensing state] shall, moreover, make available any other relevant information to the greatest extent feasible and practicable to any other State, particularly any developing country that is affected by the programme, at its request."
- Principle XII: "The sensed State shall have access to them on a non-discriminatory basis and on reasonable cost terms."
- Principle XIII: "a State carrying out remote sensing of the Earth from space shall, upon request, enter into consultations with a State whose territory is sensed in order to make available opportunities for participation and enhance the mutual benefits to be derived therefrom.

Treatment of Benefit-Sharing in Terrestrial Extractive Industries

- 1992 Convention on Biological Diversity (CBD) → Nagoya Protocol (NP)
- Issues and solutions that find parallels in current discussion of space resources utilization:
  - Treatment of "raw" materials vs. "derivative" products thereof.
  - Establishment of benefit-sharing agreements on case-by-case through bilateral negotiations between parties defined on a country of origin basis.
  - Treatment of intellectual property rights.
  - Balancing of developing countries and developed countries interests, and the establishment of an international implementation and capacity building fund - funded by Governments, and not through direct contribution by the private sector.
  - Distinctions between commercial and non-commercial research use of genetic

Approaches to Benefit Sharing

- **Access and Benefit Sharing (ABS) Under the CBD**: bilaterally negotiated agreements between the State hosting a genetic resource and a State seeking to access or use that resource.
- **Collaborative Benefit Sharing / Collaborative Resource Management**: a general set of benefit sharing mechanisms which are "designed to provide the means for local communities to share power with governmental actors" in decision making related to the use of local natural resources. (Nkhata)
- **Corporate Social Responsibility**: when private sector investments in the social and public development of a community or market affected by resource use is intended to offset any perceived or real negative impacts of that private sector investment
- **Fund and Revenue Sharing Based**: common in the extractive industries, and function by seeking to ensure that "funds accumulated through fees, permits, and/or taxes from protected areas or tourism establishments are allocated to local communities." (Wynberg and Hauck)

Implications for Space Resources Discussions

Factors for Consideration:

- Policy integration and articulation with broader development goals at the local and national level
- Participatory design and decision making processes
- Mechanisms to ensure or at least address objective and equity in implementation and execution - which might include attention to contracts and workforce integration in a multinational context. [43]
- A management or governance approach that is adaptive and responsive to changes in technical, market and/or environmental factors.

Conclusions

- No benefit without development
- There is a need for an adaptive approach to the development of governance approaches to space resources benefit
- Most benefit sharing expectations and arrangement are defined, implemented, and executed through national and local policy and regulation - rooted in internationally agreed to principles
- Concept of benefit will need to evolve due to the off-Earth nature of this potential economy as some current concepts won't apply

Secure World Foundation

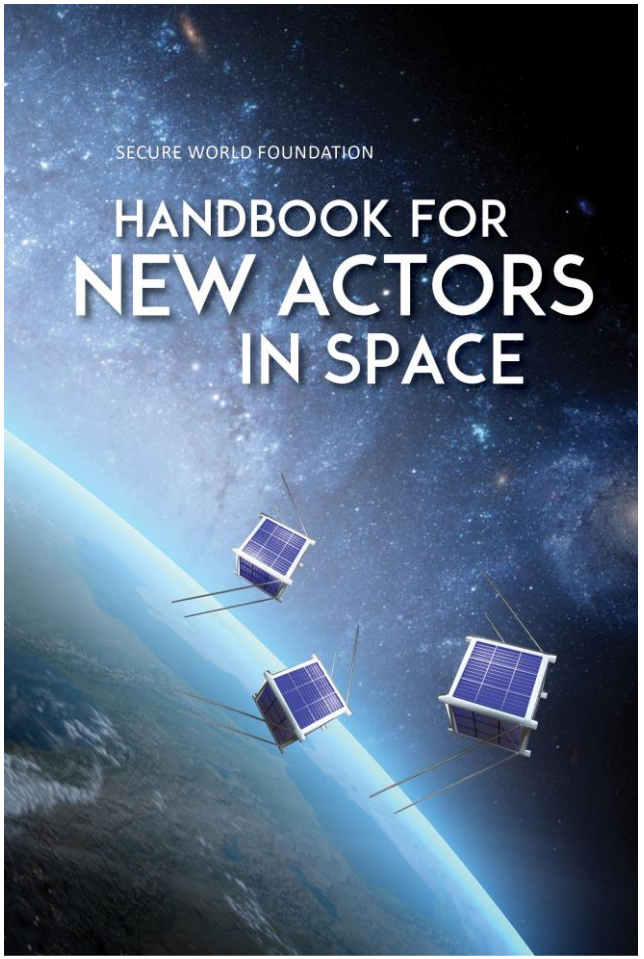
Secure World Foundation ***is a private operating foundation*** that promotes cooperative solutions for space sustainability

- **Our vision:** The secure, sustainable and peaceful uses of outer space contributing to global stability and benefits on Earth

- **Our mission**: To work with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its peoples

SWF Handbook for New Actors in Space

- **Goal:** Create a publication that provides an overview fundamental principles, laws, norms, and best practices for safe, predictable, and responsible activities in space
- **Primary audiences:**
  - Countries developing space programs and/or having to oversee and regulate their first satellites
  - Universities and start-up companies that are developing/operating satellites
- **Electronic copies** are available through the SWF website, free of charge: **www.swfound.org/handbook**



SECURE WORLD FOUNDATION

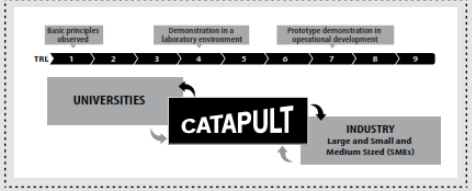
Promoting Cooperative Solutions for Space Sustainability

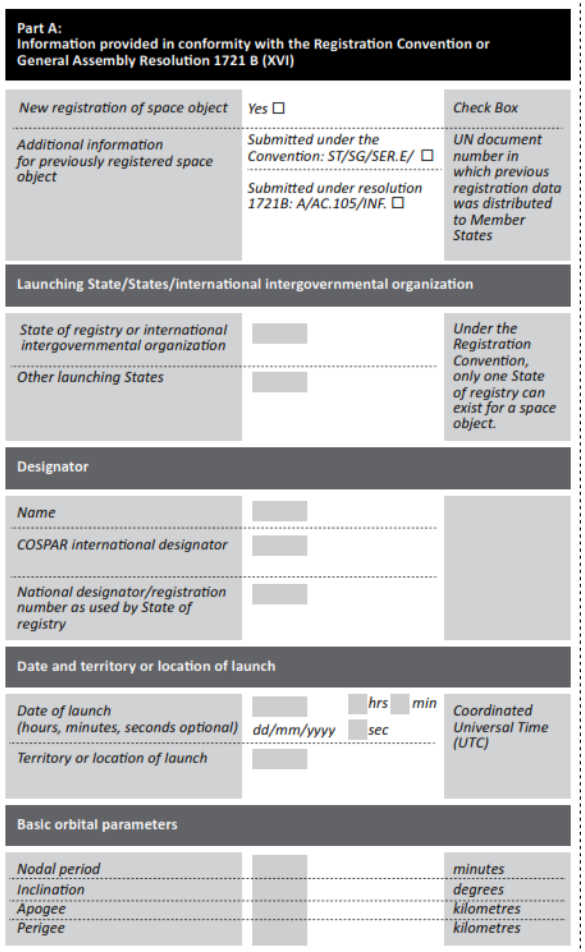
Contents

- Chapter 1 – International framework
- Chapter 2 – National policy and administration
- Chapter 3 – Responsible space operations

Case Study:
The United Kingdom Satellite Applications Catapult

The United Kingdom Satellite Applications Catapult was established by the government of the United Kingdom (UK) in May 2013 with the goal of creating economic growth in the UK through supporting the development, commercialization, and use of satellite applications. According to its Delivery Plan 2015–2020, the Catapult (Figure 8) aims to promote satellite application and technology development and to help domestic industry "bring new products and services more rapidly to market." The Satellite Applications Catapult is one of 11 "Catapults" operating in the UK, each focusing on different technologies and application areas. The Catapult operates as a private, not-for-profit research organization. It is governed by a board, which includes representation from the United Kingdom Space Agency (UKSA) and from Innovate UK—a government agency focused on fostering technology and economic development.





Part A:
Information provided in conformity with the Registration Convention or General Assembly Resolution 1721 B (XVI)

New registration of space object	*Yes* ☐	*Check Box*
Additional information for previously registered space object	*Submitted under the Convention: ST/SG/SER.E/* ☐ *Submitted under resolution 1721B: A/AC.105/INF.* ☐	*UN document number in which previous registration data was distributed to Member States*

Launching State/States/international intergovernmental organization

State of registry or international intergovernmental organization		*Under the Registration Convention, only one State of registry can exist for a space object.*
Other launching States		

Designator

Name		
COSPAR international designator		
National designator/registration number as used by State of registry		

Date and territory or location of launch

Date of launch (hours, minutes, seconds optional)	*hrs* *min* *dd/mm/yyyy* *sec*	*Coordinated Universal Time (UTC)*
Territory or location of launch		

Basic orbital parameters

Nodal period		*minutes*
Inclination		*degrees*
Apogee		*kilometres*
Perigee		*kilometres*

UNOOSA International Registry Form

Questions?

Thanks.

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