Space Resources: International Legal Frameworks

Ian Christensen
Director of Private Sector Programs
Secure World Foundation

*The New Space Economy:*
*Opportunities and Challenges for the European Space Industry*

SDA Bocconi School of Management       Milan, Italy       June 4, 2018
Secure World Foundation is a *private operating foundation* that promotes cooperative solutions for space sustainability

- **Why space sustainability?** Increasing reliance on space assets coupled with potentially destabilizing trends

- **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
The Foundation acts as a research body, convener and facilitator to examine key space policy topics often through partnership.
More Private Sector Actors

Share of Satellites Launched per Decade, by Operator Type

“Non-traditional” Space Applications

Rapid expansion in the number & types of commercial space applications is challenging existing policy context for space activities.

Governmental policy and regulation must be developed to support these activities, in manner that is consistent with international obligations, and that provides for benefit.
Space Resources – Current Status

Technology / Business

• “Mining” of in-space resources is technically feasible
• Fundable business plans have been presented
• Several years (at least) away from commercial-scale operations
• Market focus on in-space applications
• Timeline for return on investment is long: more risk?

Policy / Legal

• Overarching legal context: the Outer Space Treaty (1967) – but a gap in the law relative to space resources
• Emerging consensus that space resources utilization is not prohibited
• What is the meaning of “appropriation?” Of “use?”
• How are benefits realized and shared?
• What balance between domestic law and international law?
Outer Space Treaty of 1967
(105 State Parties)

• ARTICLE I: “Outer space, including the Moon and other celestial bodies, shall be free for exploration and use by all States…”

• 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.”

International law provides a framework under which all space activities are conducted but does not address space resources with any specificity
The need for regulation – to provide industry certainty and implement international obligations.

The role of policy – to provide a context for development.
• The Hague International Space Resources Governance Working Group aims to build consensus on regulatory “concepts needed to enable, support and co-ordinate the use of space resources and be acceptable for space-faring nations and other interested states”

• Industry, government, and civil society participation from across the globe

Coordination of principles at national and international level will help States establish the conditions under which socio-economic benefit might result from space resources development
Terms of Reference - Objectives

- Assess the need for a framework for space resource activities
- In case of need, to lay the groundwork for the definition of such a framework based on the UN Space Treaties
- The groundwork required will include the identification and formulation of building blocks for the governance of space resources with possible implementation of a relevant forum for the negotiations
- Following its conclusions the Working Group would like to encourage States to start negotiating a framework
Platform

The WG is hosted by a Consortium of organizations located in all continents:

- **International Institute of Air and Space Law (Leiden University, The Netherlands)**
- **Secure World Foundation (USA)**
- **Nishimura Institute for Advanced Legal Studies (Japan)**
- **University of Luxembourg (Luxembourg)**
- **University of Cape Town (South Africa)**
- **Catholic University of Santos (Brazil)**
- **Centre for Resources, Energy and Environmental Law (University of Melbourne, Australia)**
- **Indonesian Centre for Air and Space Law (Padjajaran University, Indonesia)**
- **Ten to the Ninth Plus Foundation (USA)**
Draft Building Blocks for the Development of an International Framework on Space Resource Activities

As released in September 2017

1. Objective
2. Definition of key terms
3. Scope
4. Principles
5. International responsibility for space resource activities and jurisdiction over space products
6. Access to space resources
7. Utilization of space resources
8. Due regard for interests of all countries and humankind
9. Avoidance of harmful impacts resulting from space resource activities
10. Technical standards for prior review of, and safety zones around space resource activities
11. Monitoring and redressing harmful impacts resulting from space resource activities
12. Sharing of benefits arising out of the utilization of space resources
Draft Building Blocks (cont’d)

13. Registration and sharing of information
14. Provision of assistance in case of distress
15. Liability in case of damage resulting from space resource activities
16. Visits relating to space resource activities
17. Institutional arrangements
18. Settlement of disputes
19. Monitoring and review
Invitation to submit comments on the Draft Building Blocks

The preliminary result of the work of The Hague Space Resources Governance Working Group can be found at:

The Working Group invites any interested organisation or individual to submit comments and remarks on the text of the Building Blocks by **15 October 2018** to spaceresources@law.leidenuniv.nl or via this [questionnaire](https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-for-air-space-law/the-hague-space-resources-governance-working-group).
A Stable, Predictable, and Sustainable Operating Environment in Space

How can governments and the private sector work together to ensure sustainability of the domain?

**Issues/Topics**

- Policy context for identifying and obtaining benefit
- Regulatory authority, structure & process
- Space traffic management
- Norms of behavior
- New actors & best practices
- Government role as both customer & operator

**Example Efforts**

**UNISPACE +50 and High Level Fora**
- Agenda-setting for future multilateral discussions

**The Hague Space Resources Governance Working Group**
- Multilateral, multi-sectoral effort to define policy and legal “building blocks”

**SWF Handbook for New Actors in Space**
- Overview of fundamental principles, norms, and best practices for safe, predictable, and responsible activities in space
We’ve been using space resources for a long time...

...accessing them in space is new

Questions and Discussion?

ichristensen@swfound.org

Dagger from King Tut’s Tomb, analyzed to contain iron from a meteorite

Source: USAToday