



Promoting Cooperative Solutions for Space Sustainability

# 10<sup>th</sup> United Nations Workshop on Space Law

September 5, 2016

*Contributions of Space Law and Policy to Governance and Space Security  
in the 21<sup>st</sup> Century*

*Panel 1 – International Space Law and Policy Development*

## New Actors in Space

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## **New Actors in Space** (including new States, and new private actors)

(within the context of this workshop's listed objectives):

- (a) To promote understanding, acceptance and implementation of the United Nations treaties and principles on outer space;
- (b) To address space governance and the broader perspective of space security, including on norms of behaviour and space policy development;
- (c) To consider space law and policy in the context of space economy, space society, space accessibility and space diplomacy;
- (d) To study trends and challenges to the progressive development of space law; and
- (e) To assess further needs for capacity-building, assistance and outreach in space law and policy.

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## **New Actors in Space (including new States, and new private actors)**

Who are they? And, is the existing law sufficient?

1959 COPUOS: 24 Member States

57 years later... 2016 COPUOS: 77 Member States (grew by 53)

another 57 years later... 2073 COPUOS: 130 Member States? More?

**... and the growth of new private commercial actors will be a lot faster....**

**New Actors in Space** are

- Sovereign States becoming space-utilizing, space-accessing, and space-capable
- International organizations more active in space
- New private actors (commercial, with governments as their customer and/or partner – not just their regulator).
- Academia

## **New Actors in Space**

Who are they? And, is the existing law sufficient?

*New Private Actors* - Manufacturers, launch providers, spacecraft operators

Governments are reaching out to private industry. Why? Private industry:

- Innovates faster, and is faster to market
  - Carries the risk
  - Is motivated to succeed (if you don't perform, you are gone)
- 
- Manufacturers (rockets engines, smaller satellites, spacecraft components, etc.)
  - Launch providers (including small satellite launch providers, new rocket companies, etc.)
  - Spacecraft operators (remote sensing companies, telecommunications (voice & data), maritime domain awareness, mixed payloads (shared gov./private S/C), etc.)

## New Actors in Space

Who are they? And, is the existing law sufficient?

*What is the role of the governments in all this? What is their relationship to new actors in space? Governments are*

- *Customers/Consumers*
- *Partners*
- *Regulators*

As **Customers:** Trend is for governments as *consumers*, who will buy the end product and not specify the process (design, details, etc.,) As a consumer (amongst other consumers), governments get what the market offers (with a limited ability to influence demand).

Also, new private actors can offer resilience and redundancy (quick launch times for new sats.)

## New Actors in Space

Who are they? And, is the existing law sufficient?

*Governments are*

- *Customers/Consumers*

As **Customers**: the trend is for governments:

- Not the primary customer (“Not Very High Resolution” EO data); thus, Govs. driving requirements
- Not the only customer (Launch?); thus govts. don’t have to pay for “Mission Assurance”), or
- Not customers at all (small satellite launch market, space mineral resources).

To get private funding from investors (in some markets (EO)), new actors might not advertise that their primary customer is a government (they don’t want to be seen as government-reliant).

Private actors might see governments as bad customers (red tape, long wait times, difficult to deal with, want to own all the data). They might rather serve private sector customers only.

*Governments are*

- *Customers/Consumers*

Overall, the trend is from **Privatization** to **Commercialization**

- **Privatization** - the government contracting with a private company to build something under a government contract, instead of the government building it itself.
- **Commercialization** - A market where there are multiple sellers and the government is just one of multiple buyers.
  - This changes the economics (from states of):
    - *oligopoly* - a state of limited competition, in which a market is shared by a small number of producers or sellers, and
    - *oligopsony* - a small number of buyers exists for a product.



## New Actors in Space

Who are they? And, is the existing law sufficient?

As **partners**, government can be a source of investment

- Non-dilutive financing
  - Governments don't want to be shareholders, or not allowed to be shareholders.
- Research and Development funding
  - To help technology past low Technology Readiness Levels (TRLs less than 5)
- Why are governments funding this? Economic benefits
  - Jobs
  - Domestic STEM capacity
  - Domestic industrial capabilities (so that Govs. can be customers in the future)

As **partners**, governments can help coordinate customers, and foster emerging companies and markets (flight opportunities with new companies, coordinated by the government)

## New Actors in Space

Who are they? And, is the existing law sufficient?

*As **Regulators**, governments want their domestic space industry to develop. When to regulate? How much regulation? How to balance private profit and public spending?*

- New actors want licensing for a class of activity (same class of launch vehicle; megaconstellations) rather than each individual activity; licenses on a yearly basis.
  - For experimental activity, they don't want to re-certify each new change they make (that's burdensome, and reduces innovation).
- New actors face a challenge in devoting time/resources to compliance (too much burden threatens their viability). They would prefer:
  - A conversation with regulators on rule-making and regulatory regimes,
  - A “presumptive approval”, rather than a “presumptive denial”
  - Classes of permitted activity, with listed prohibitions (blacklist); **rather than** classes of prohibited activity, with a few allowable exemptions (whitelist)
  - Chances to amend their filings, rather than costly & lengthy re-submissions.

## New Actors in Space

Who are they? And, is the existing law sufficient?

*As **Regulators**, governments want their domestic space industry to develop. When to regulate? How much regulation? How to balance private profit and public spending?*

- **New Actors** want certainty, clarity, consistency, predictability in the rules.

Are governments ready?

- Do regulators have the capacity for emerging space activities like mega-constellations, reusable rockets, advanced remote-sensing, etc.,?
- If the regulatory structure is in place, balanced, clear, and is the agency sufficiently funded and staffed?
- Can it respond to new actors in a timely fashion?

**New Actors** understand that there are areas where the industry will sort out the rules by themselves.



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## New Actors in Space

Who are they? And, is the existing law sufficient?

*Your citizens want to do these space activities: Establish new space companies, rocket companies, spacecraft design and manufacture, spacecraft operation, selling services, performing science. Will you let them? Can you help them?*

Rationale: Article VI and VIII of the Outer Space Treaty; national space legislation & national registries.

- National Space Legislation: 22+ States
- States Parties to the REG: 62 ratifications
  - Established their national registry of space objects & notified OOSA: 29 States



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## New Actors in Space

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SWF's upcoming publication: *Handbook for New Actors in Space* (2017; 150+ pages; hard copies and .pdf online; no cost)

<http://swfound.org/handbook>

Intended to reach two categories of new actors in space:

- **States developing national space policies and regulations; and**
- **Start-up companies, universities, and other non-governmental entities** beginning their first foray into space activities.

The goal of the Handbook is to provide both groups with a broad overview of the fundamental principles, laws, norms, and best practices for peaceful, safe, and responsible activities in space.



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*Thank you!*

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