

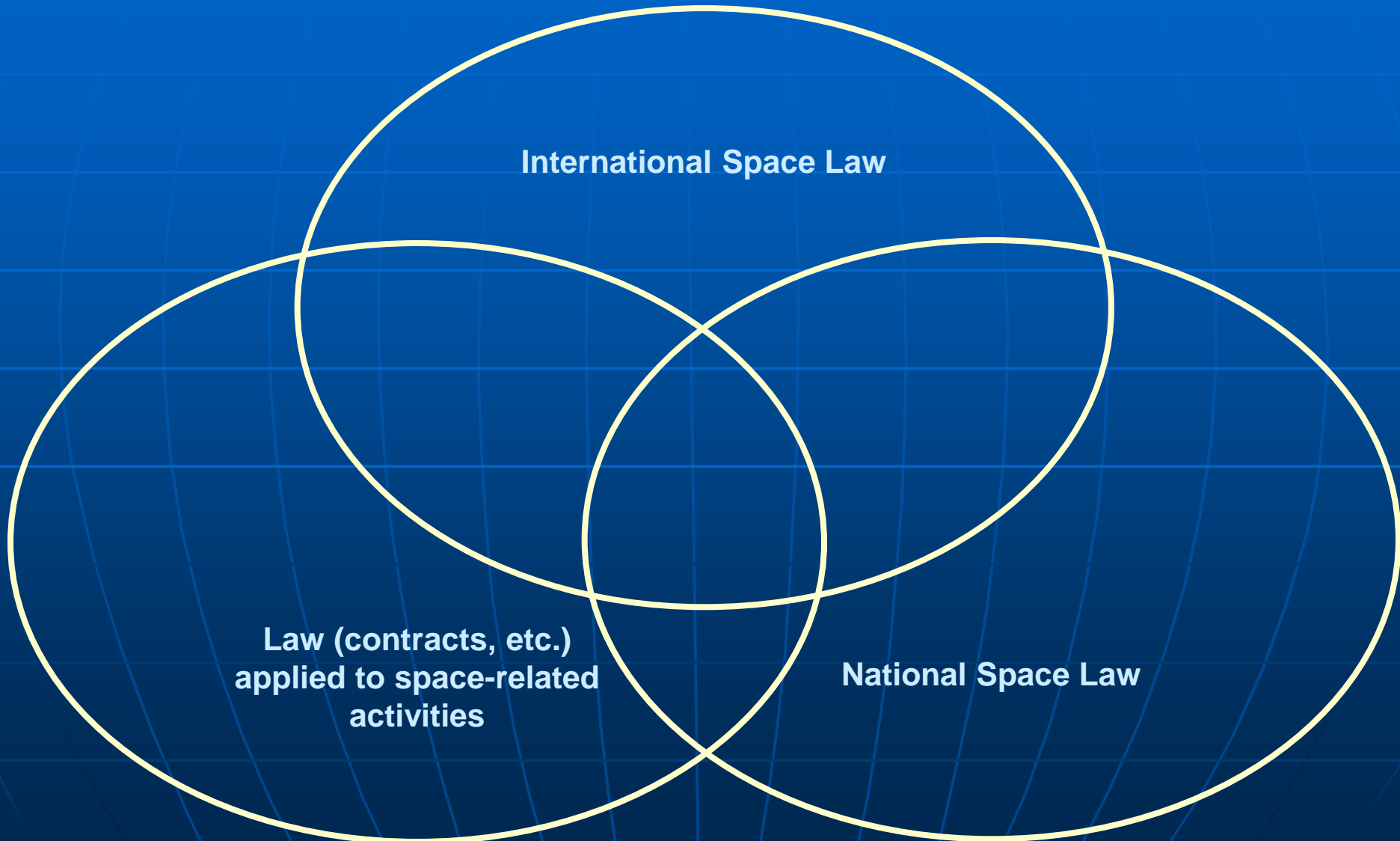
SPACE LAW

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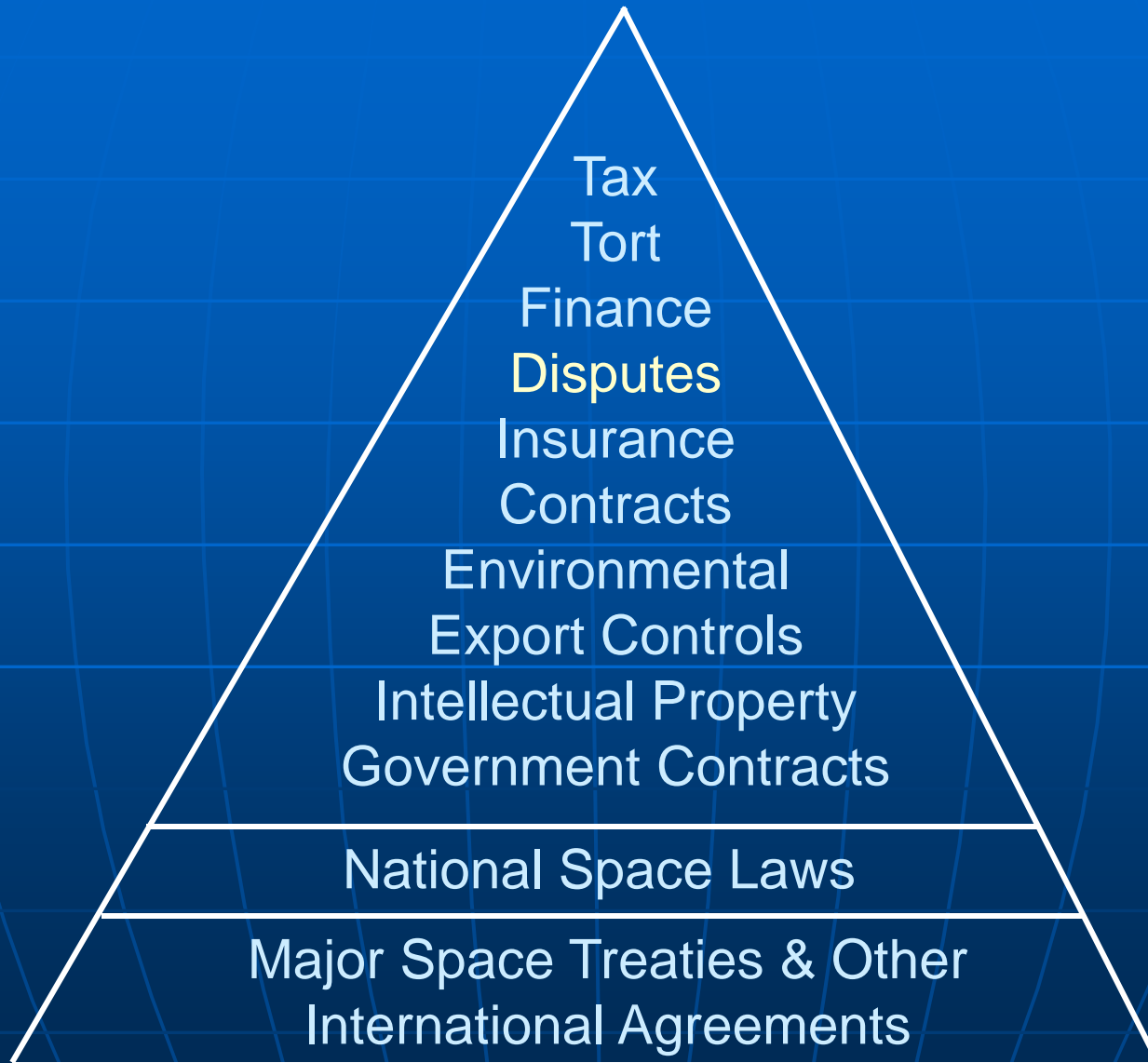
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WHAT IS SPACE LAW?



THE CONTEXT



OVERVIEW

- International Legal Regime
- US Space Laws
- **HOT** Issues of Space Law

MAJOR SPACE TREATIES

- Outer Space Treaty – 1967 (104)
- Rescue and Return – 1968 (94)
- Liability Convention – 1972 (92)
- Registration Convention – 1975 (62)
- Moon Treaty – 1979 (16)

The Outer Space Treaty of 1967

- Exploration and use of outer space shall be carried on for the benefit and in the interest of all mankind
- Outer space and celestial bodies are free for exploration and use
- Outer space and celestial bodies are not subject to national appropriation

The Outer Space Treaty of 1967

- The Moon and other celestial bodies shall be used exclusively for peaceful purposes
- States responsible for their national activities in outer space, whether carried on by governmental or non-governmental entities

The Outer Space Treaty of 1967

- Activities of non-governmental entities requires authorization and supervision by the appropriate state
- States retain jurisdiction and control over their space objects
- States are liable for damage caused by their space objects

MAJOR SPACE TREATIES

- Outer Space Treaty - 1967
- Rescue and Return - 1968
- Liability Convention - 1972
- Registration Convention - 1975
- Moon Treaty - 1979

U.N.G.A. PRINCIPLES

- DBS (1982)
- Remote Sensing of Earth from Space (1986)

OTHER INTERNATIONAL AGREEMENTS

- ITU Convention, Constitution & Radio Regulations
- Int'l Space Station Agreements
- ESA

NATIONAL LAWS



- Governs the Actions of Individuals & Companies in the U.S. & Other Countries

U.S. SPACE LAW

- The NASA Act (1958)
- Commercial Space Launch Act (1984) as Amended
- Land Remote – Sensing Commercialization Act (1984)

U.S. SPACE LAW

- Inventions in Space Act (1990)
- Land Remote – Sensing Policy Act (1992)
- 2015 Commercial Space Launch Competitiveness Act
- Title 51

OTHER U.S. SPACE LAWS

- Arms Export Control Act (1968)
- Federal Procurement Statutes, FAR, Agency Supplements
- State Space Laws

HOT ISSUES OF SPACE LAW

- Small Satellites
- Hosted Payloads/Ride Shares
- Space Debris
- Suborbital Space Tourism
- Use of Space Act Authority
- Launch Services

Small Satellite Issues: Licensing to Launch

What are Small Satellites

- Under 1000 kg
- CubeSat
- Microsat
- Nanosat

Small Satellite Advantages

- Reduced price per satellite
- Reduced launch vehicle size and cost
- Ability to function as hosted payloads
- Reduced technology risks
- Shorter life cycles
- Shorter procurement timelines
- Use of constellations

Small Satellite Disadvantages

- Less capabilities
- Smaller solar arrays
- Fewer communication options
- Potentially more expensive per pound due to economies of scale

Small Satellite Uses

- Scientific Research
- Remote Sensing
- Communications

Small Satellites and US Law

- Responsibility and Liability
- Spectrum Registration and Licensing (FCC)
- Remote Sensing Registration (NOAA)
- Launch License (FAA)
- Export Control laws (DOS/DOC)
- Space Debris Mitigation

Launch Options

- Dedicated Launch Vehicles
- Ride Share
- Hosted Payload

Hosted Payloads

- Benefits:
 - Cost-Effective Access to Orbit
 - Satisfy 80% of requirements for 20% of costs
 - Share integration, launch & operations costs
 - Decreased Time for Access
 - 22 – 36 months versus years
- Primarily a Government (SMC) Initiative

Hosted Payload Legal Issues

- Allocation of Risk
 - Late HP Delivery – dummy payload, loss of operation revenue
 - Issues on orbit – Interference with satellite or bus; Satellite movement or sale
 - Insurance – No standard form. Evaluate during contract negotiation

- No standard T&C
 - Each case is unique. Understand and allocate risks

NASA Support for Commercial Space Activities

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Commercial Business Opportunities with NASA

- There are numerous opportunities for U.S. businesses to do business either directly with NASA or by using NASA facilities.
- NASA has statutory authority to award:
 - Contracts
 - Grants
 - Cooperative Agreements
 - Space Act Agreements

NASA Contracting Authority

- Like most Federal agencies, NASA routinely awards contracts to private sector companies based on the availability of appropriated funds.
- Contracts are typically:
 - Competitive awards
 - Sole source awards
- NASA contracts are awarded to support NASA's Congressionally authorized and funded programs.
- All NASA contracts are subject to the Federal Acquisition Regulation ("FAR").
- NASA solicitations are available on www.FedBizOpps.gov

NASA Grants and Cooperative Agreements

- NASA may award grants and cooperative agreements.
- Grants and cooperative agreements are not subject to the FAR but are subject to Office of Management and Budget grant regulations.
- Typically grants and cooperative agreements call for services that are mutually beneficial to both NASA and the grantee.

Space Act Agreements

- The National Aeronautics and Space Act ("Space Act") authorizes NASA to enter Space Act Agreements ("SAA") to develop a wide range of space related programs.
- SAAs are either:
 - Reimbursable;
 - Non-reimbursable; or
 - Funded.
- SAAs are not advertised on FedBizOpps
- SAAs are governed by NASA Policy Directives (NPD 1050.1I) and NASA's "Space Act Agreement Guide".
- NASA currently has more than 1,000 existing SAAs

NASA's Traditional Mission Focus

- NASA's traditional mission focus was on U.S. space programs using government personnel and NASA facilities.
- Examples include:
 - Apollo lunar program; and
 - Space Shuttle.
- NASA awarded large contracts to U.S. aerospace companies to design, build and launch space vehicles, build launch facilities and provide engineering support to NASA personnel.

Commercialization of Space

A Significant Change in NASA's Mission Focus

- The **Commercial Space Launch Act** ("CLSA") significantly changed NASA's focus.
- Congress enacted the CLSA to incentivize the growth of the U.S. commercial space launch industry.
- CLSA governs the sale of excess NASA launch facilities and services to commercial aerospace companies.

Commercialization of Space

A Significant Change in NASA's Mission Focus

- CLSA permits NASA to recover only its "direct costs"
- CLSA requires the Secretary of Transportation to "consider the commercial availability on reasonable terms of substantially equivalent launch property or launch services or re-entry services from a domestic source. . . ."
- CLSA does not permit NASA to use its government-owned facilities and personnel to compete with U.S. commercial companies that can provide equivalent services.

Business Opportunities for Commercial Aerospace Companies

- Comparatively small aerospace companies have two avenues to do business with NASA:
 - Direct business with NASA – contracts, grants, cooperative agreements or SAAs; or
 - Subcontract with established aerospace companies that currently have contracts, grants, cooperative agreements or SAAs.

Direct Business with NASA

- Conducting business directly with NASA, whether by contract, grant, cooperative agreement or SSA, has benefits as well as detriments.

Potential Benefits:

- More control over relationship with NASA
- No dilution of funds
- Opportunity to impress NASA with your expertise and capabilities

Potential Detriments:

- Failures are your direct responsibility – no one else to blame
- Responsibility for compliance with all applicable regulations
- Lack of familiarity with NASA's way of doing business

Subcontracting with NASA

Prime Contractors

- Conducting business with NASA indirectly through subcontracts with contractors, grantees, cooperative agreement holders or SSA participants also has benefits and detriments.

Potential Benefits:

- Taking advantage of prime contractor's experience with NASA
- Somewhat limited flow-down of applicable NASA regulations
- Scope of work can be tailored to your capabilities

Potential Detriments:

- Prime contractors can be difficult with which to work
- Subcontract terms may be nonnegotiable
- Getting paid on time may be difficult

Where to Seek Assistance

- Small Business Administration
- NASA's Advocate for Small Business
- Large Aerospace Companies

QUESTIONS



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