



Promoting Cooperative Solutions for Space Sustainability

A primer on space policy

Why it's important for space activities, and current hot policy topics

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BACKGROUND ON PUBLIC POLICY

What is Public Policy?

- “The principled guide to action taken by the administrative executive branches of the state with regard to a class of issues in a manner consistent with law and institutional customs” (Wikipedia)
- “The public and its problems” (Dewey 1927)
- “How issues and problems come to be defined, and how they are placed in the political and policy agenda” (Parsons, 1995)
- “How, why, and to what effect governments pursue particular courses of action or inaction” (Heidenheimer et al, 1990)

“Rational” policy analysis

- Policy analysis has come to be dominated by economics
 - Definition of several alternative courses of action
 - Weighing the costs and benefits of each alternative
 - Choosing the alternative that best satisfies all the criteria
- Continual push for a more “scientific” (i.e., factual and unbiased) approach to developing, choosing, and implementing a policy option
- In the real world, the process by which policy happens and the people involved in the process play as big (if not a bigger) role than the “science”



Shortcomings of Scientific Policy Analysis

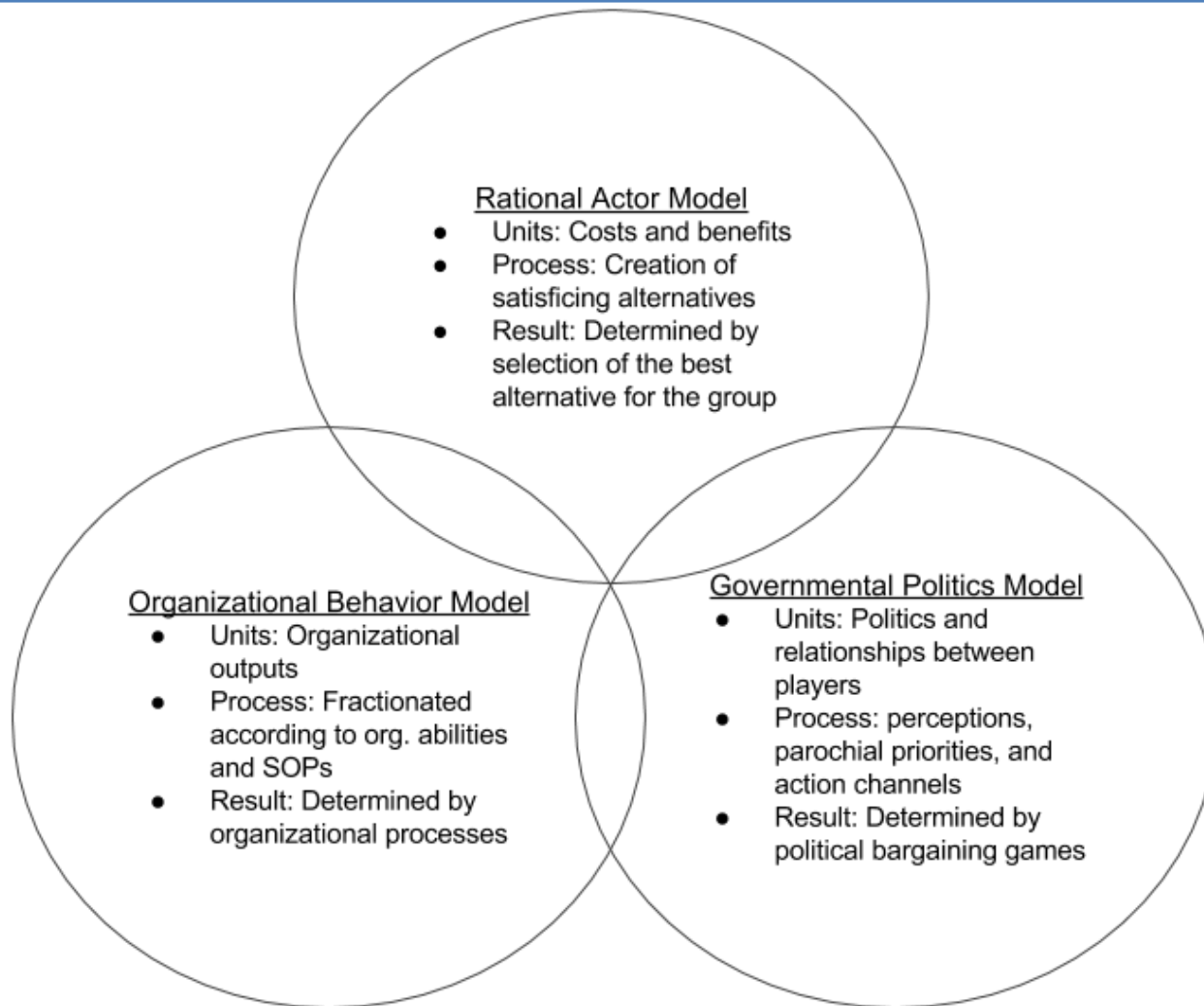
- Rittel and Webber, “Dilemmas in a General Theory of Planning” (1973)
- Scientific tools for problem solving were becoming more widespread after the “success” in government applications
- Professionals in multiple areas of public service coming under increased attack from the public over perceived failings in solving social problems
- Diagnosed it as a function of all the easy problems having been solved, and the only problems left were “wicked” in nature

Wicked vs Tame Problems

- Tame problems (mathematics, chemistry, chess) have **clear objectives and resolutions**, and can be resolved through application of scientific methods
- Wicked problems are those for which a **purely scientific/rational approach cannot be applied (Roberts 2000)**
 - Cannot explicitly define all the variables
 - Stakeholders have radically different worldviews and timeframes
 - Constraints and resources change over time
 - Problem is never resolved definitively

Most persistent public policy problems are wicked in nature

Models of public policy decision-making



INTERAGENCY SPACE POLICY PROCESS



Sources of space policy

1. Presidential Policy Directives (PDDs) issued based on recommendations developed by an interagency process in the executive branch

2010 National Space Policy

2. Public laws enacted by Congress, including periodic authorization and appropriations acts

National Aeronautics and Space Act of 1958

3. Public presidential policy declarations on specific issues or programs

John F. Kennedy "Moon speech" in 1962

4. International conventions and treaties to which the U.S. is party

1967 Outer Space Treaty



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The interagency process

- Many of the most important space policy decisions are PDDs created via an interagency process
- Purpose of the interagency process is to get input/perspectives from all the departments and agencies that have an interest in a decision
- Specifics of the process have changed over time, as each presidential administration puts in their own tweaks



Evolution of the space interagency process

- Eisenhower
 - Used the National Security Council (NSC) process to issue PDDs on first National Space Policy
 - Used the National Aeronautics and Space Council (NASC), created in 1958, to do civil space policy (NASA)
- Kennedy
 - Continued to use NASC (established Vice President as Chair) and NSC
- Nixon
 - Handled national security space within the NSC
 - Used special task group to do civil space policy, and dissolved NASC

- Ford/Carter
 - Handled national security space within the NSC
 - Handled civil space within the Office of Science and Technology Policy (OSTP)
- Reagan
 - Created Senior Interagency Group on Space (SIG-Space) within NSC to handle space policy
- George H.W. Bush
 - Resurrected the National Space Council to handle civil space, named VP Quayle to lead it
 - Continued to use NSC for national security space

- Clinton
 - Created the National Science and Technology Council (NSTC) and shifted space under it
 - But really used pseudo-NSC process, led by OSTP

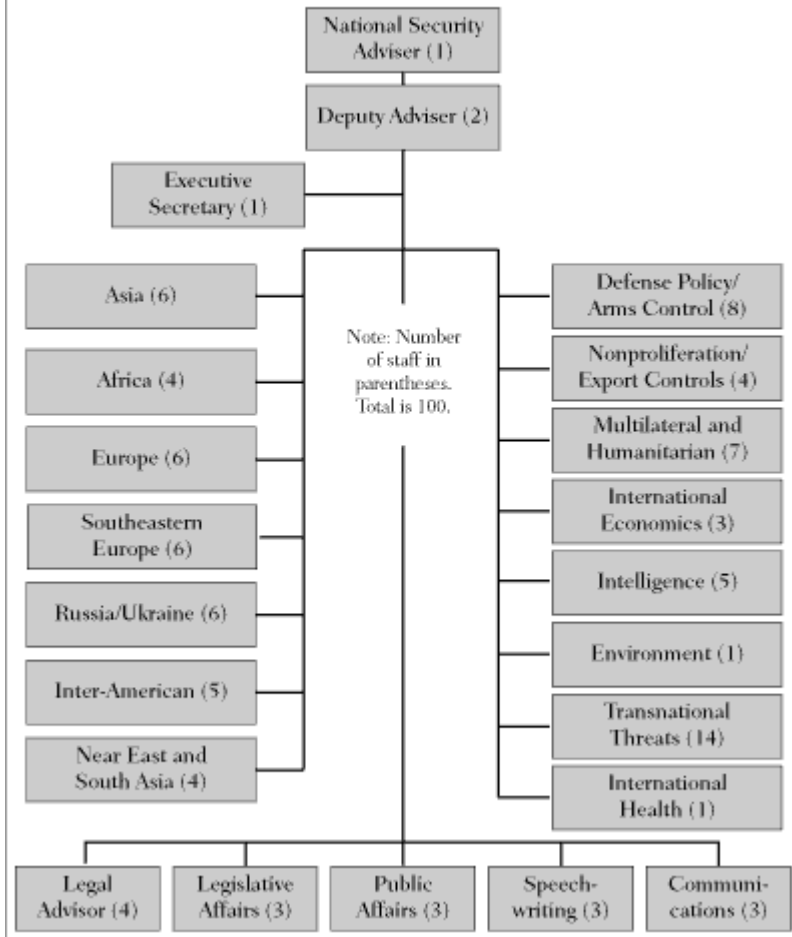
- George W. Bush
 - Formally shifted space policy back under the NSC, with OSTP supporting

- Obama
 - Originally looked at bringing back the National Space Council
 - Continued with largely the same NSC process as under Bush, with OSTP supporting

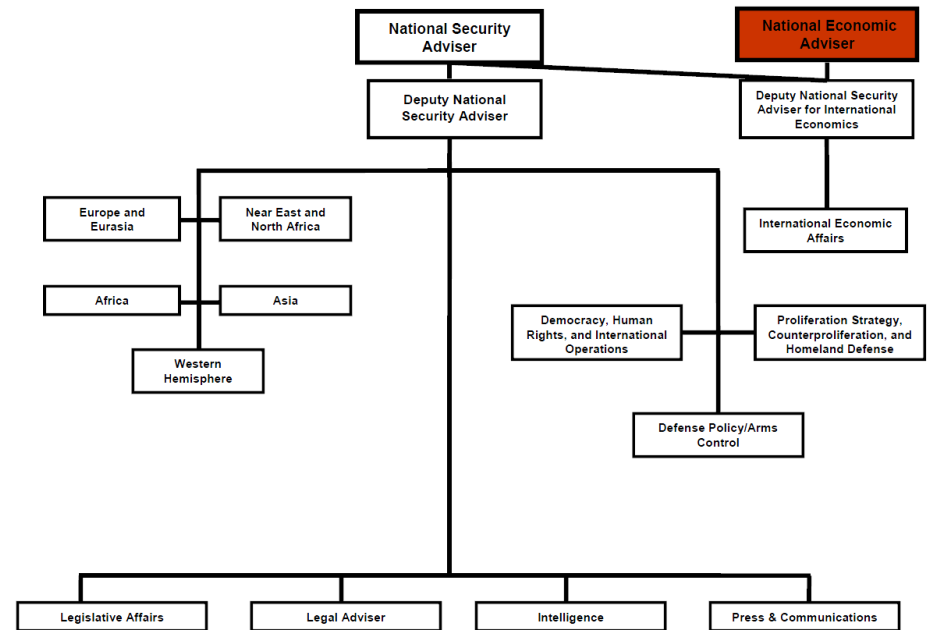
- The National Security Council (NSC) was established in 1947 to be a formal “discussion body”
 - Chaired by the President, membership are other Cabinet-level officials
- Purpose of the NSC is to formulate and debate policy issues that ultimately need a presidential decision
- Under George H.W. Bush, NSC process was revised to be a three-tier process
 - Goal is to resolve issues at the lowest level, and only elevate deadlocked issues

Figure 3

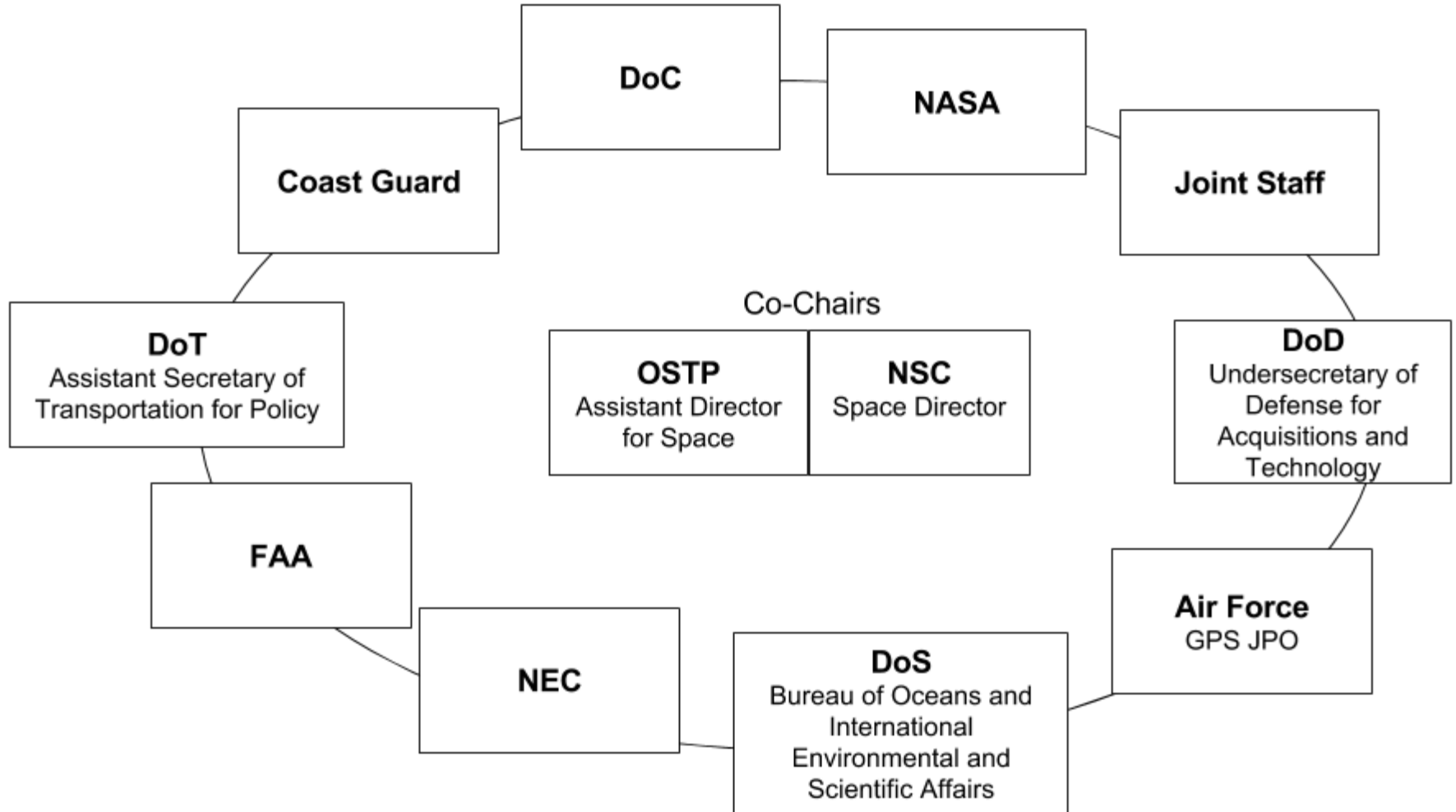
Clinton National Security Council 2000



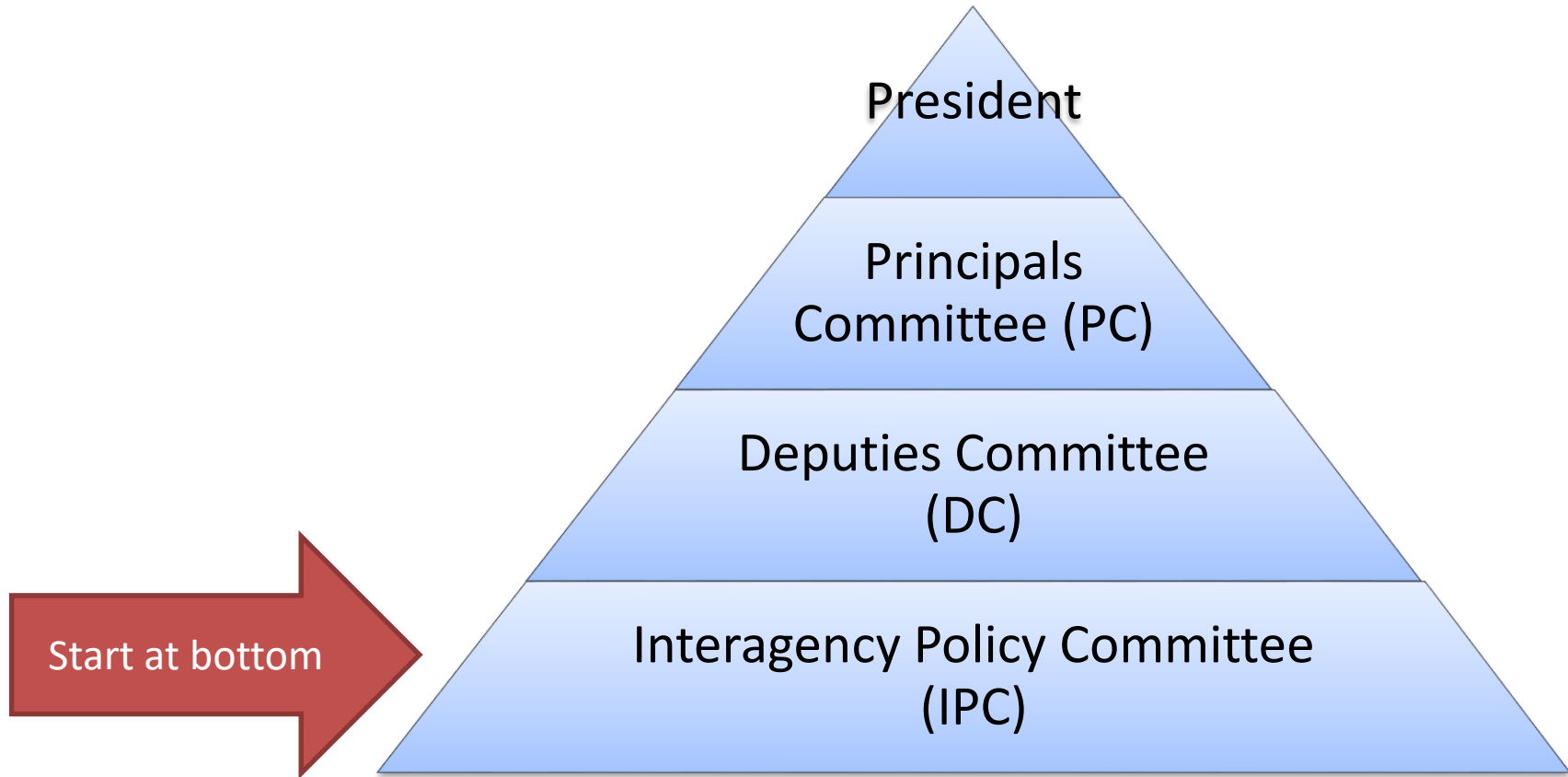
Bush NSC 2001



Example – Clinton IPC on GPS



3-tier model of the NSC process





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Example: George W. Bush standing PCCs

Issue	NSC	OSTP	OMB	OSD	JCS	IC	State	DOC	DOT	NASA
Commercial Strategy		Ex-Sec	X	Co-Lead	X	Co-Lead	X	Co-Lead	X	X
Space Transportation Strategy		Ex-Sec	X	Co-Lead	X	X	X		Co-Lead	Co-Lead
International Agreements		Ex-Sec	X	Co-Lead	X	X	Co-Lead	X	X	X
Spectrum Management	Ex-Sec		X	Co-Lead	X	X	X	Co-Lead	X	X
Space Protection	Ex-Sec		X	Co-Lead	X	Co-Lead	X	X		X
Space Control	Ex-Sec		X	Lead	X	X				
Intelligence Collection Requirements	Ex-Sec		X	Co-Lead	X	Co-Lead	X	X		
Export Controls	Lead		X	X	X	X	X	X		X
National Space Policy	Lead		X	X	X	X	X	X	X	X
Industrial Base		Ex-Sec	X	Co-Lead	X	Co-Lead	X	X	X	X



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CURRENT POLICY “HOT TOPICS”

- What is the future direction of NASA's human spaceflight program?
 - Continue with the Asteroid Redirect Mission (ARM)?
 - Go directly to Mars?
 - Return to the Moon?
 - What degree of international cooperation (China)?
- What is the relationship between NASA and the private sector?
 - Are certain missions (LEO cargo/crew) better suited for commercial services?
- How to ensure policy stability for NASA?
 - NASA Administrator serves 5 year fixed term (like FBI Director?)

- Under Article VI of the Outer Space Treaty, US is responsible for “*authorization and continuing supervision*” of private sector space activities
- How to modernize the current oversight/regulatory regime?
 - Which federal agency should authorize/license innovative/new commercial space activities?
 - On-orbit satellite servicing
 - Debris removal
 - Private space stations
 - Asteroid mining
 - Commercial lunar habitats
- What is the proper role of the government?
 - Investor? Customer? Partner? Competitor?

- US has become extremely reliant on space for national security and military power, and counterspace/antisatellite capabilities are proliferating
- How to deal with increasingly “contested” space domain?
 - How to increase the resilience/assurance of US national security space capabilities?
 - Should the US develop new offensive counterspace capabilities?
 - Can we deter Russia/China from kinetic attacks on space in a future conflict?
 - How best to leverage commercial industry and allies?

- Space is becoming more “congested,” with at least 500,000 pieces of space debris on orbit and 9,000 new satellites planned in next decade
- How to sustainably manage the space environment?
 - How to fund R&D of active debris removal technologies?
 - Which agency/agencies should be responsible for managing the space environment?
 - Who pays to clean up the legacy space debris?
- Should we create a Space Traffic Management regime?
 - Does it start with international first, or national first?
 - Should part of the DOD’s space situational awareness mission be moved to a civil agency?

Future of the space policy process

- Traditional civil/military/commercial barriers in space domain continue to break down
- How should the interagency space policy process evolve in the future?
 - Should it stay within the NSC?
 - Resurrect the National Space Council to handle civil space, or perhaps all of space policy?
 - Should lead agency in the White House be NSC or OSTP?



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Thank You. Questions?

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