



*Promoting Cooperative Solutions for Space Sustainability*

# Creating Policy for Dual-Use Space Technology

Dr Brian Weeden  
Director of Program Planning  
Secure World Foundation

# The challenge of policy on dual-use technology

- Public policy is “How, why, and to what effect governments pursue particular courses of action or inaction” (Heidenheimer et al, 1990)
- Enduring question in public policy of how different interests and perspectives are reconciled
- Especially found in creating public policy on dual-use technology
  - Balance national security risks (advantages) with socioeconomic benefits
- Space technology exemplifies the dual-use policy challenge
  - Most space technologies started as military technologies
  - Growing globalization and commercialization are creating increased pressure to open up space technologies



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# 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

# 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, but mainly focused on NSC
- Nixon
  - Handled national security space within the NSC
  - Used special task group to do civil space policy, and dissolved NASC

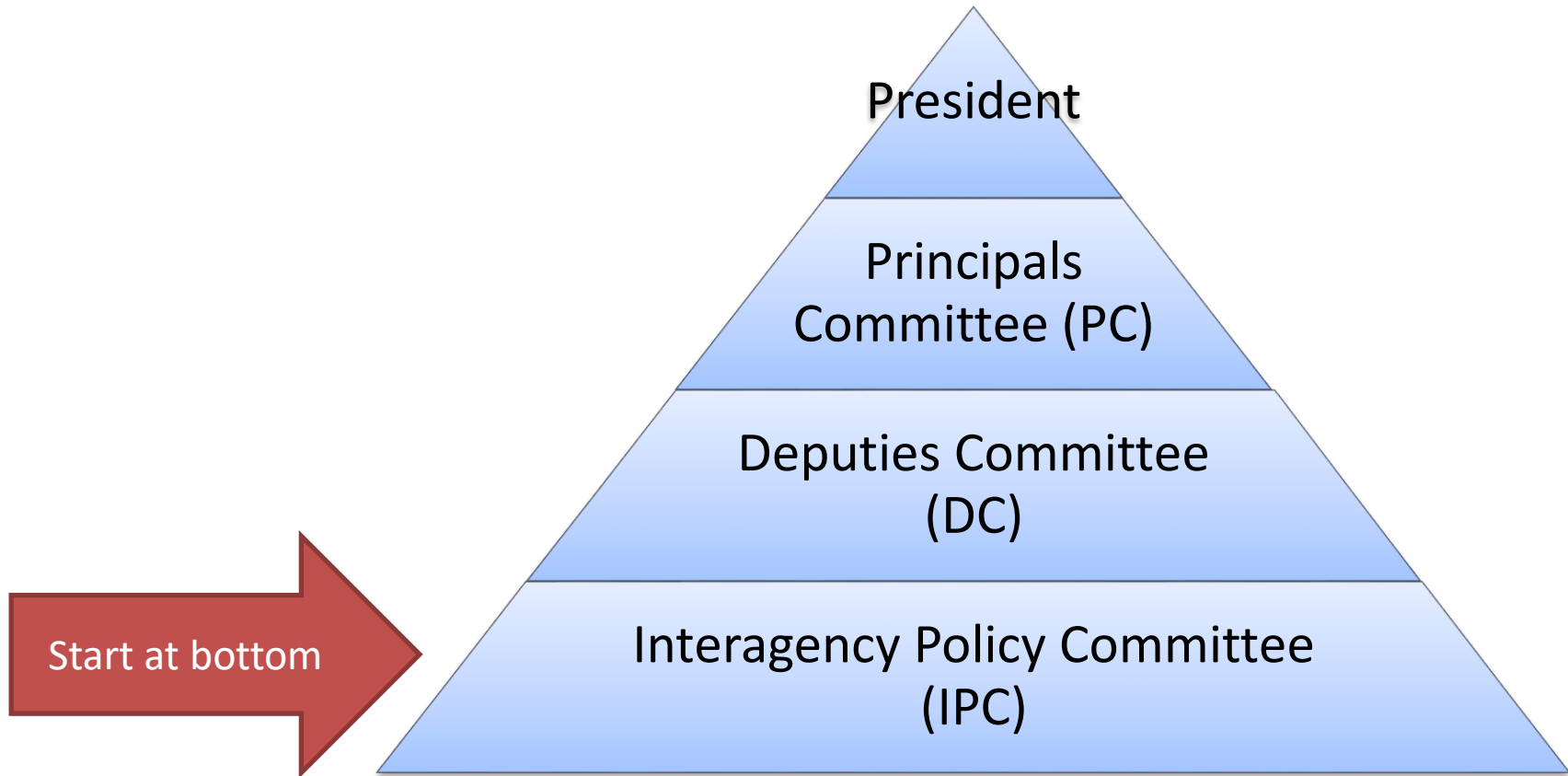
- Ford/Carter
  - Handled national security space within the NSC
  - Handled civil space within the Office of Science and Technology Policy (OSTP)
- Reagan
  - Created Senior Interagency Group on Space (SIG-Space) within NSC to handle space policy
- George H.W. Bush
  - Resurrected the National Space 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

# 3-tier model of the NSC process



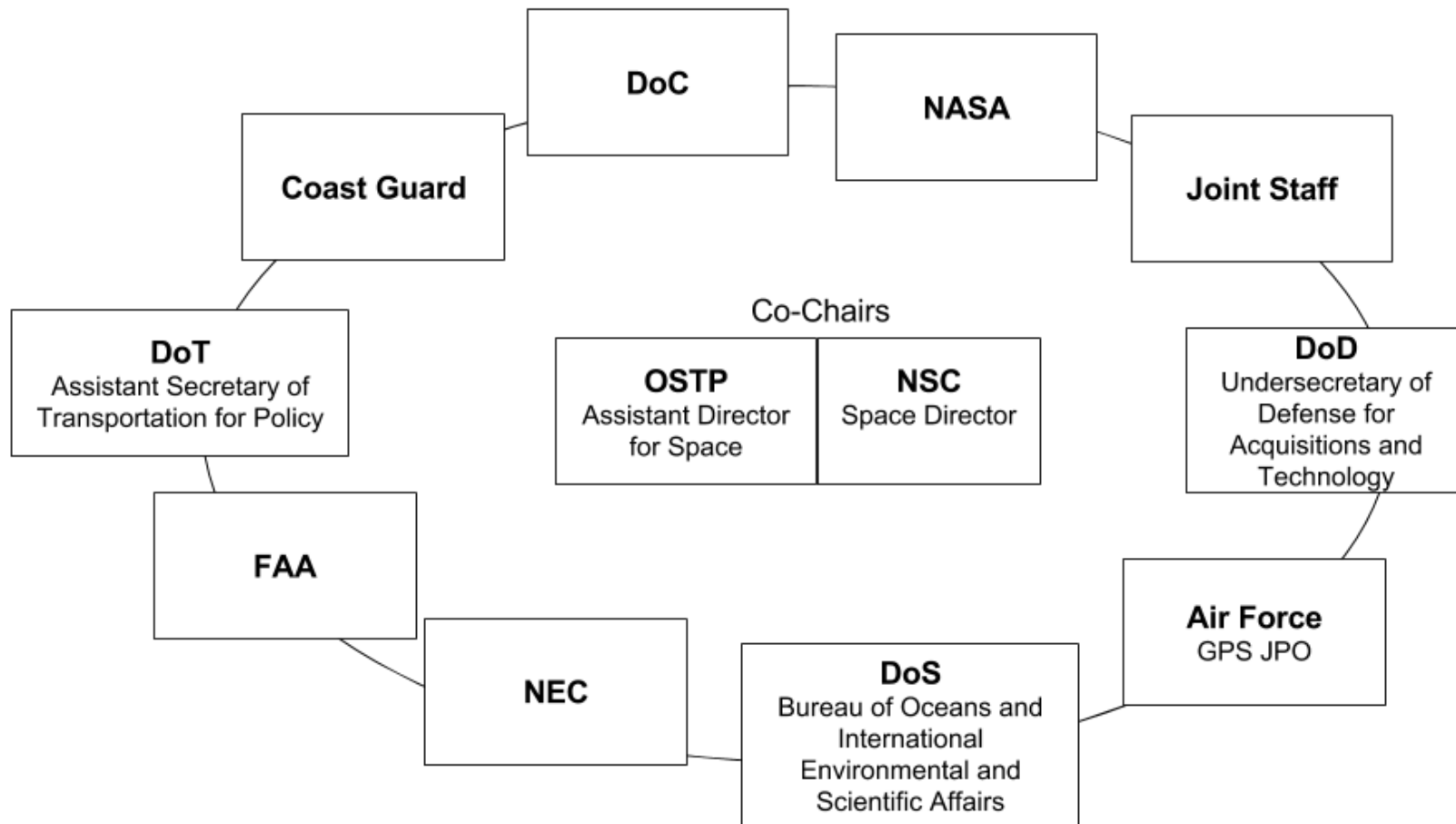


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# Example: George W. Bush standing PCCs

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

# Example – Clinton IPC on GPS





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# APPLICABLE THEORY

# Presidential leadership styles

## **Formalistic Model**

- President at the top
- Orderly policy-making with well-defined procedures
- Emphasis on hierarchy to screen information
- Specialized information and advice
- Emphasis on functional expertise
- President rarely “reaches down” for information
- Discouragement of bargaining and conflict in group

## **Competitive Model**

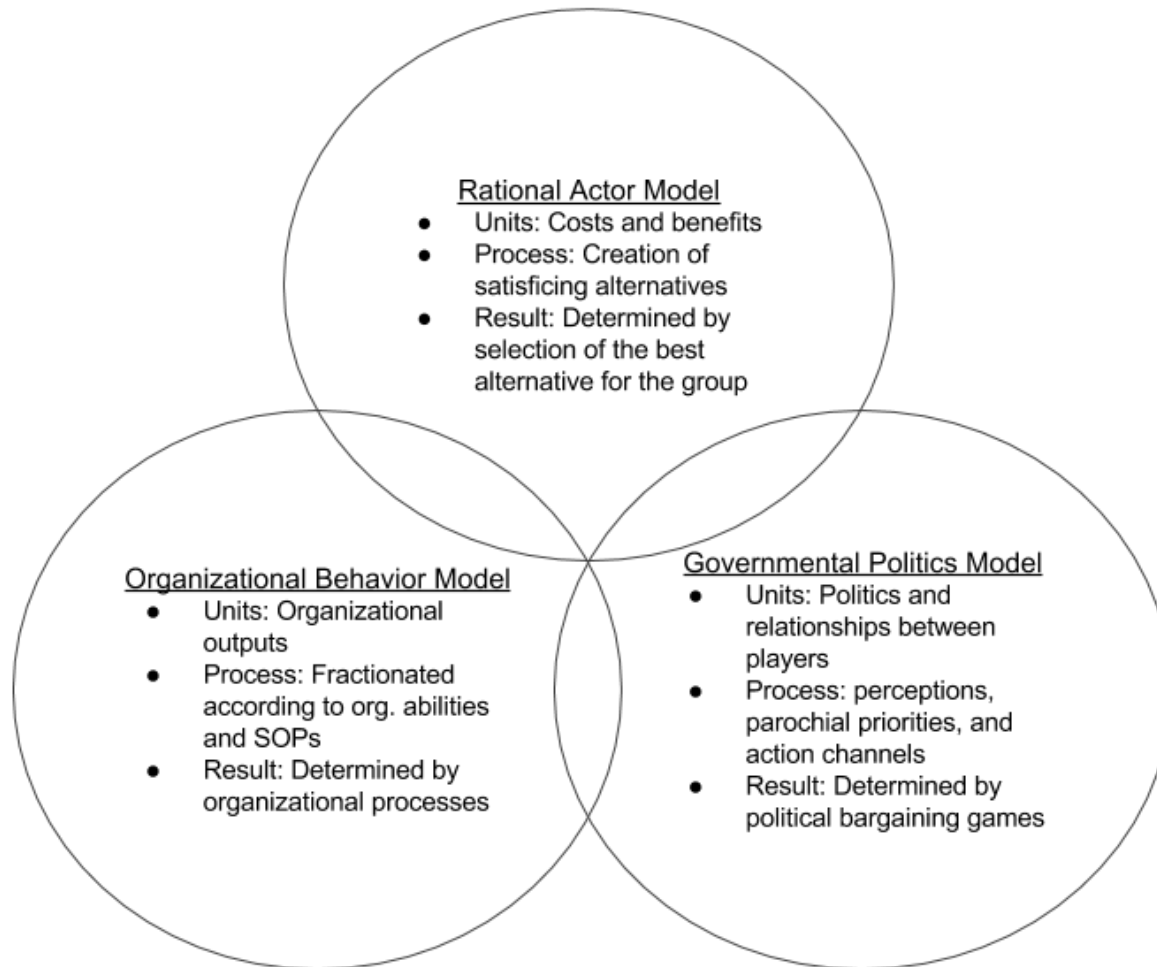
- President at the top
- Organizational ambiguity
- President may assign overlapping jurisdictions
- Multiple channels of communication to the president
- Promotion and even encouragement of debate
- President manages conflict in the group
- President may “reach down” for information

## **Collegial Model**

- President at the center
- Informal procedures
- Decision-making team led by president
- President an active member of the group
- President may assign overlapping jurisdictions
- Shared responsibility for decisions
- Advisers do not serve as information filters
- Emphasis on synthesizing perspectives in the group
- Emphasis on generalists
- President may “reach down” for information

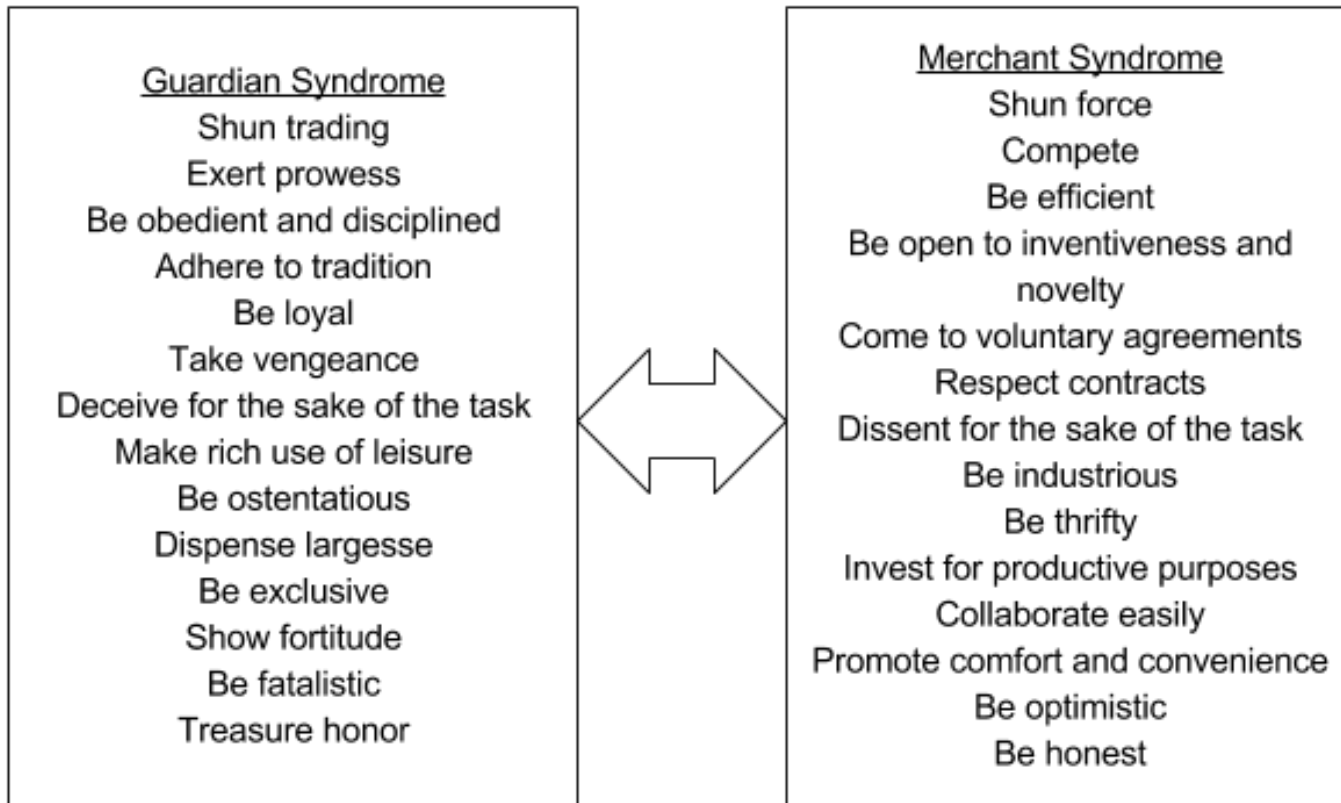
*Characteristics of ideal management styles (Haney, 2002; RT Johnson, 1974)*

# Allison's three models



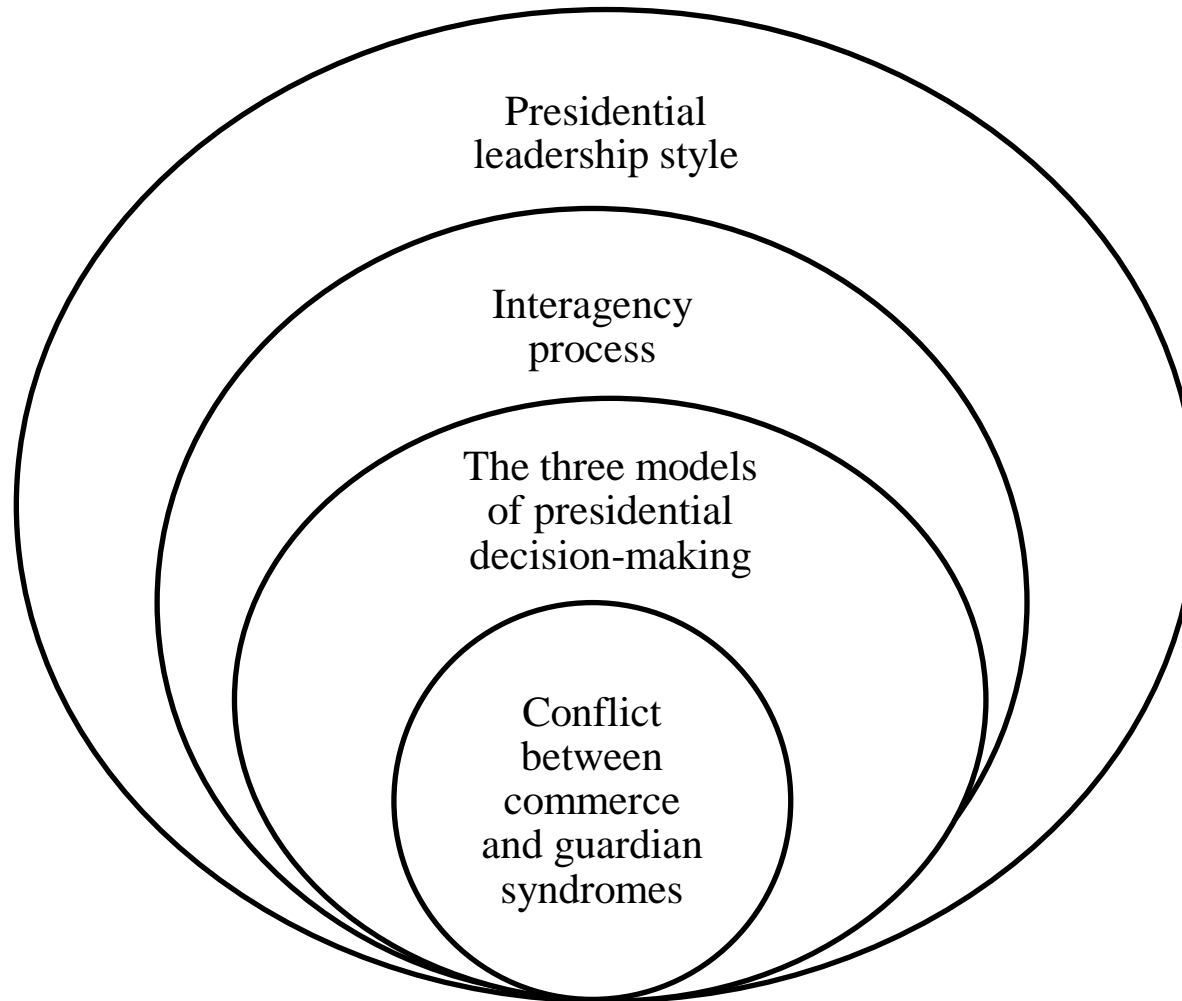
*Presidential decision-making theory (Allison & Graham, 1999)*

# Merchant and Guardian syndromes



*Systems of survival and clash of cultures (Jacobs, 1992; Pace, 1999)*



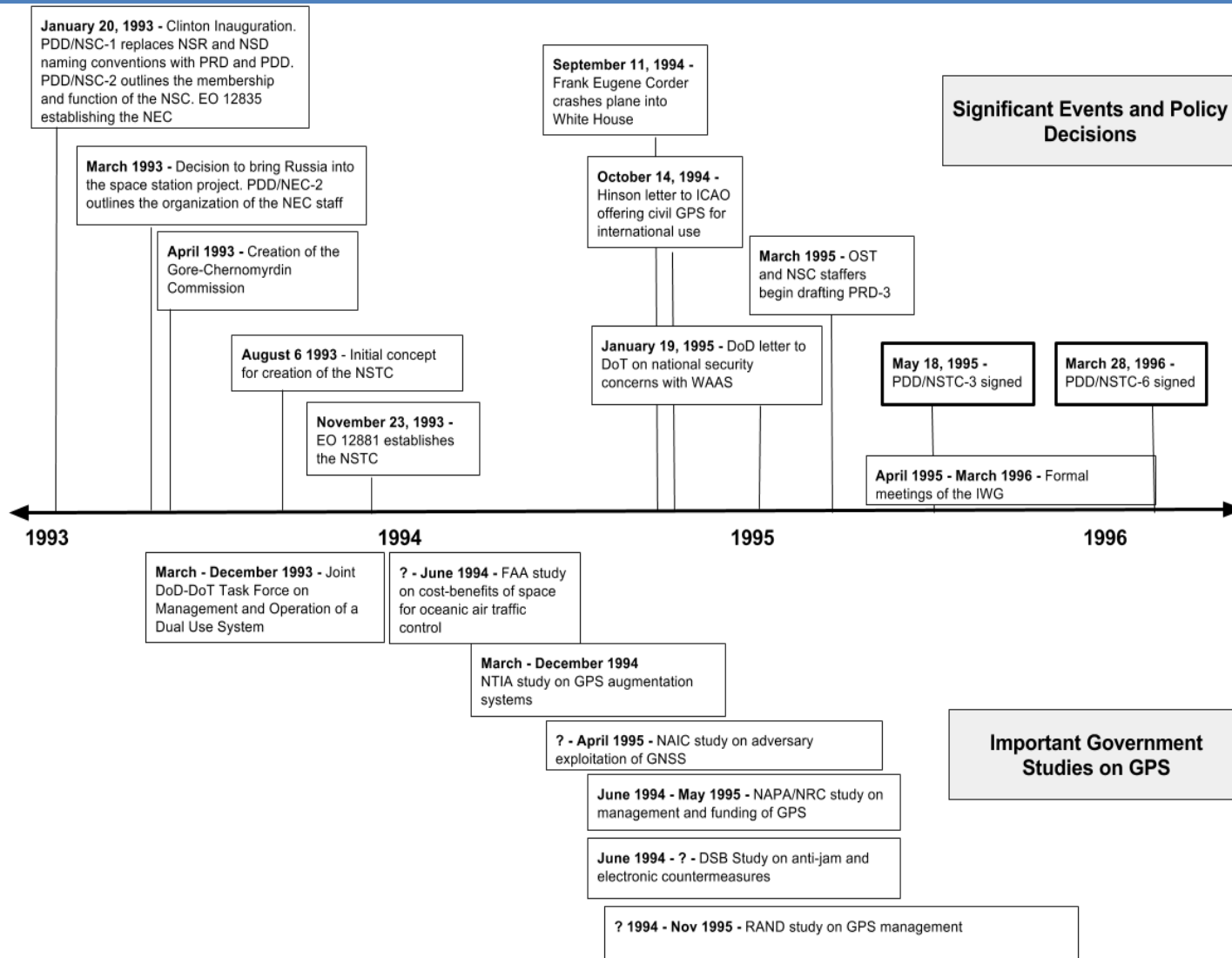




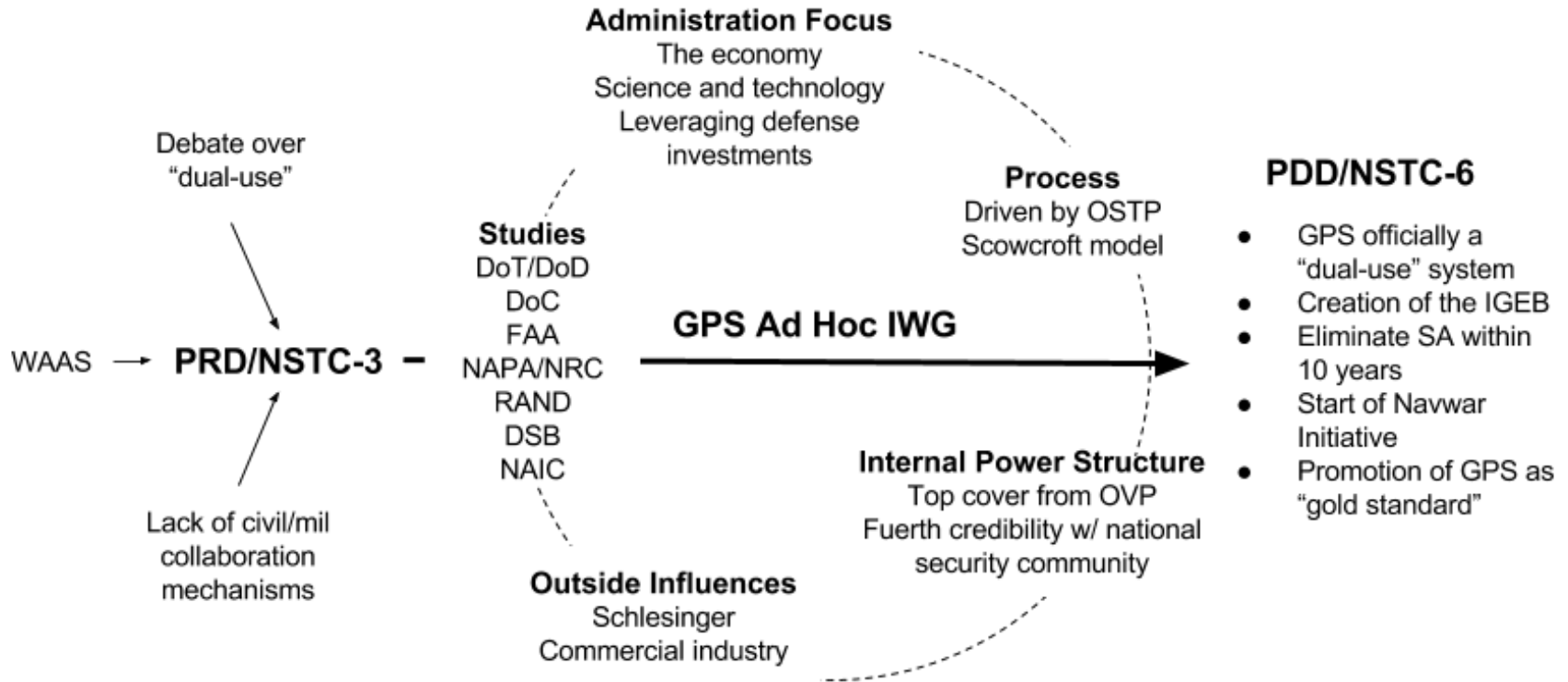
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# **EXAMPLES: CLINTON AND BUSH GPS POLICY**

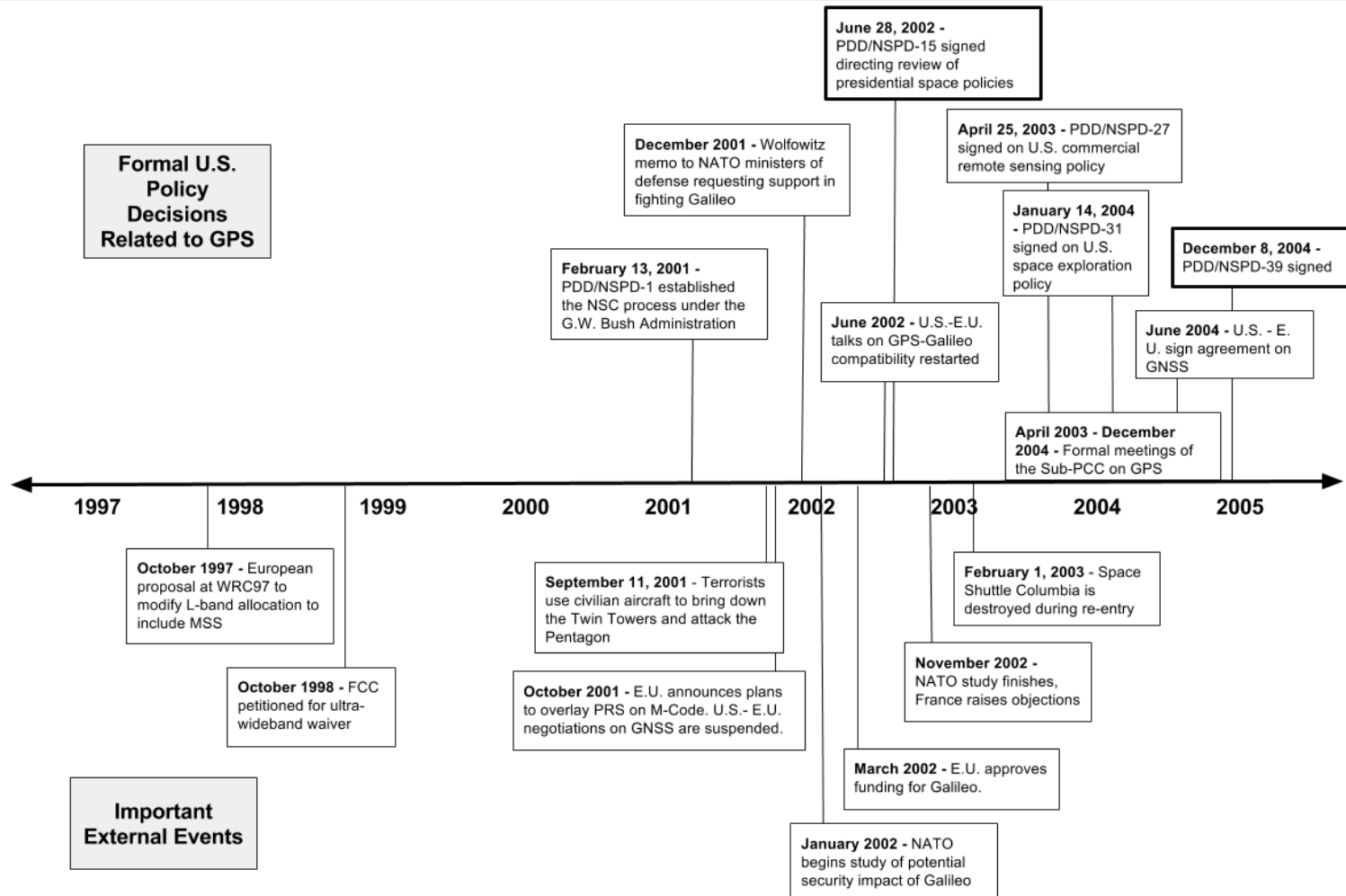
# 1996 Clinton GPS Decision – Timeline



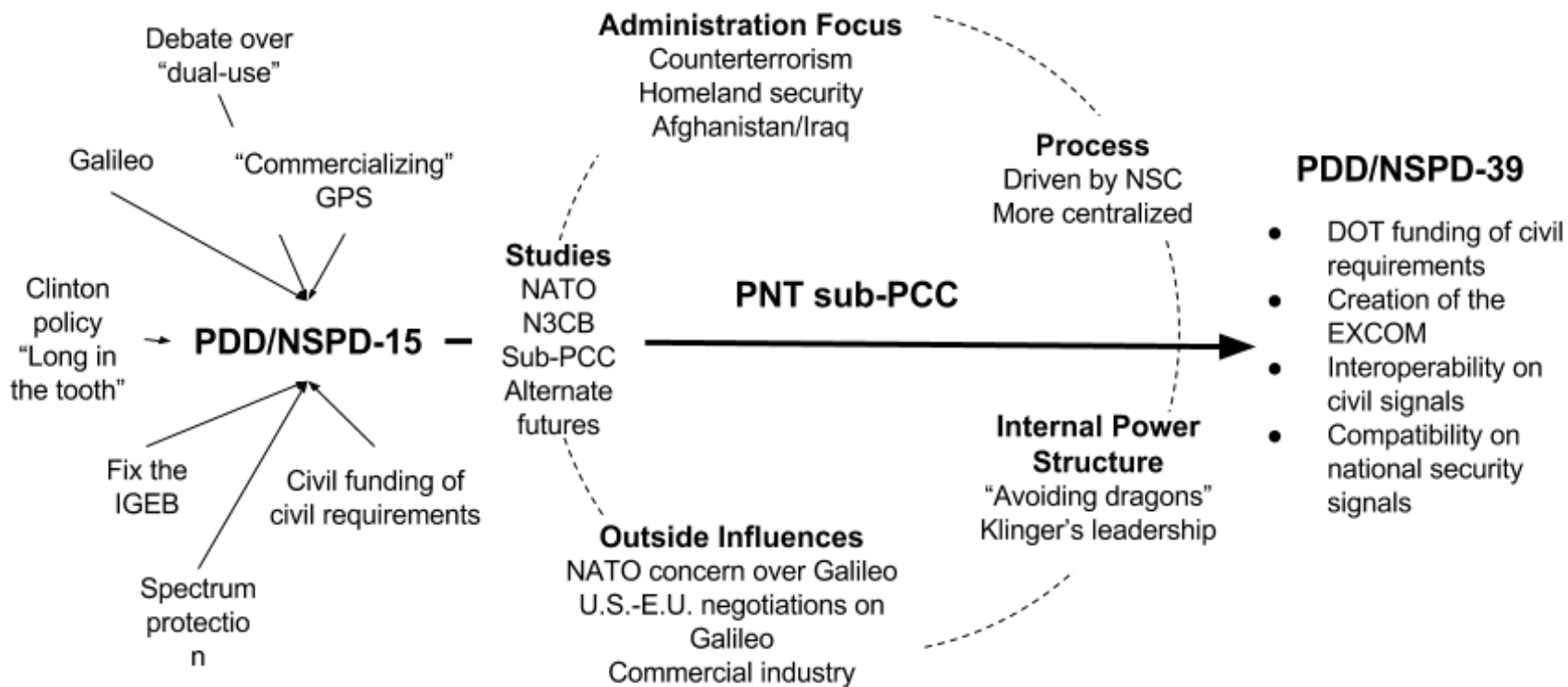
# 1996 Clinton GPS Decision – Causal Map



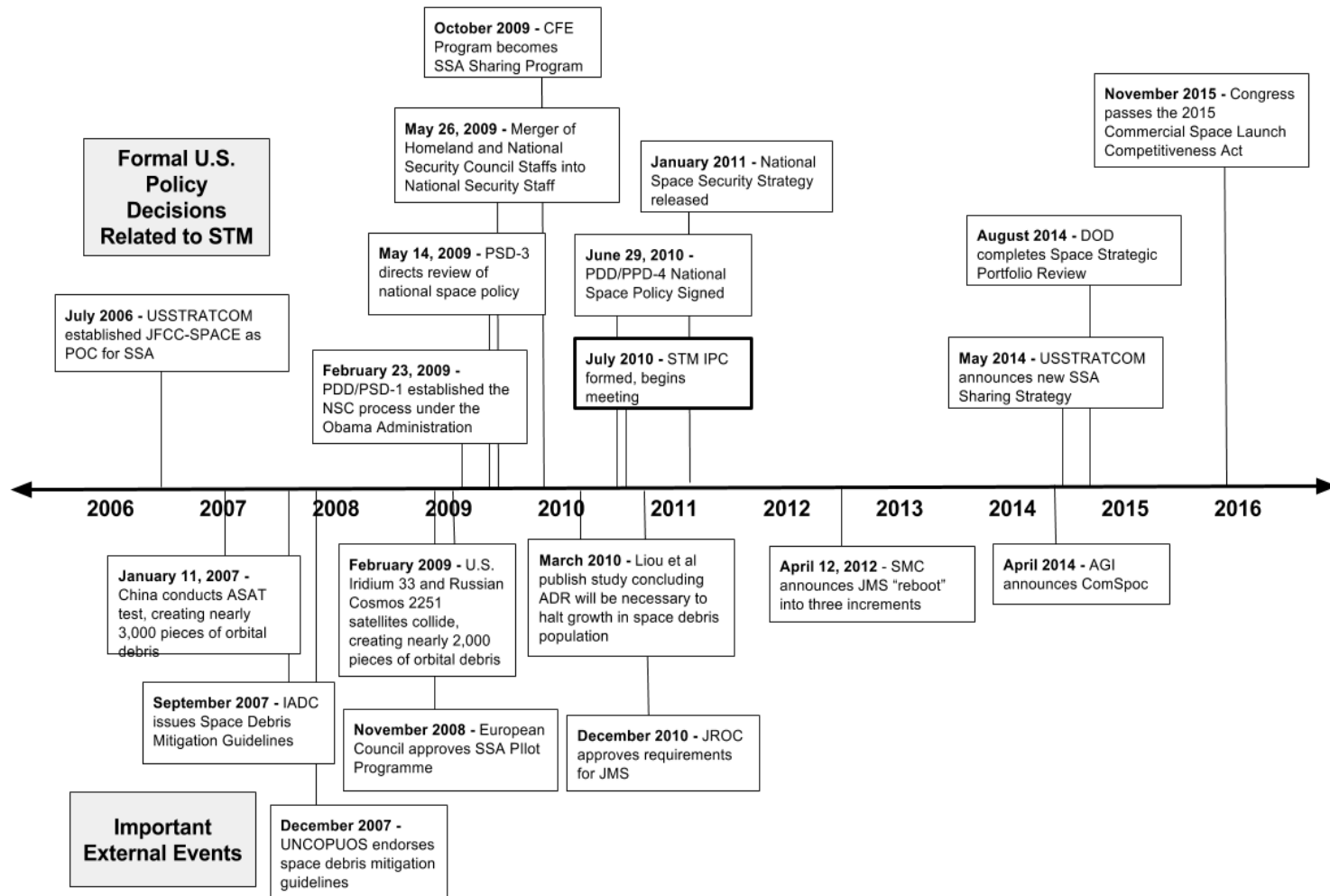
# 2004 Bush PNT Decision - Timeline



# 2004 Bush PNT Decision – Causal Map



# Obama STM Pre-Decision - Timeline

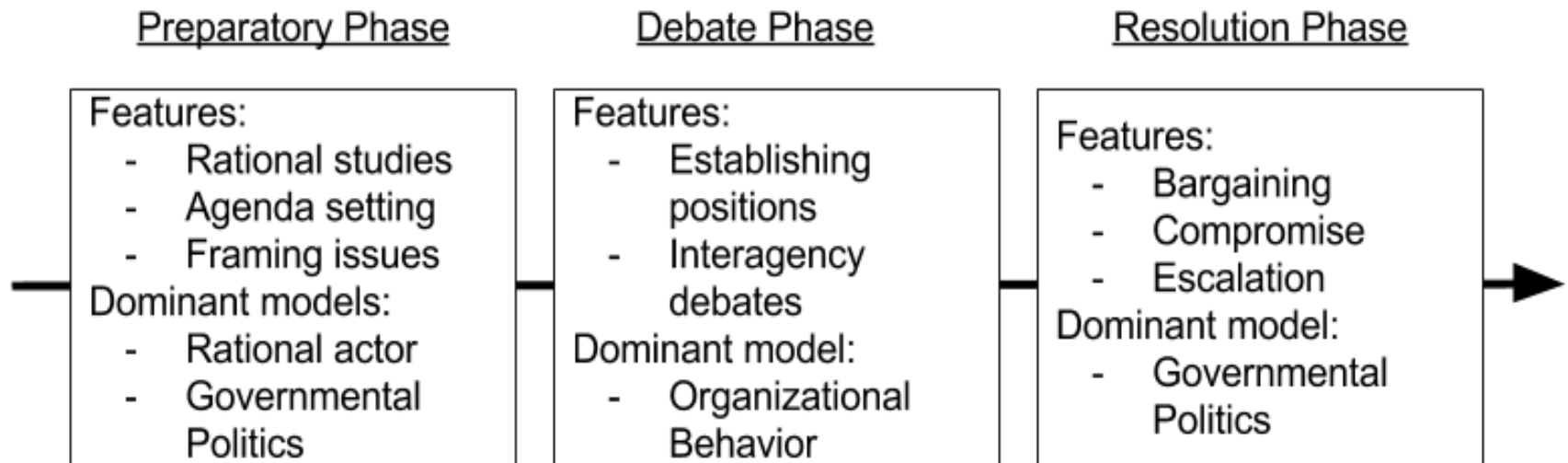


# Theory applied to real-world

P1.	The process used to make presidential policy decisions on dual-use space technology is a modification of the same interagency process used to make national security decisions.
P2'.	The outcome of presidential policy decisions on dual-use space technology can be explained using a combination of Allison's three models of rational choice, organizational behavior, and governmental politics, with each model having the most impact at a different phase of the process.
P3'.	Part of the policy debate on dual-use space technology involves two different worldviews, one pushing for greater control (or maintaining control) of the technology and one pushing for more availability of the technology, and the two worldviews are aligned with the commerce and guardian syndromes.
P4.	The personalities involved in the interagency process strongly affect the difficulty of making a policy change, the behavior and positions of organizations, and leadership of the process. Increasing the diversity of individuals involved in the process, and increasing the transparency of the process can mitigate the negative effects of personalities.



# Model of the Phases of the Interagency Process



T1	Interest in creating a new policy is motivated by a heterogeneous mix of drivers
T2	Rational choice plays a role in the process, but is unlikely to resolve conflicts.
T3	The details of presidential-level policy are primarily a reflection of bureaucratic interests.
T4	The informal interagency process matters as much, if not more, than the formal process.
T5	Mismatches in organizational structure and technical knowledge create imbalances between the DOD and the civil agencies
T6	The desire to “control” dual-use space technology undermines the benefits from its openness
T7	Unforeseen positive outcomes outweigh unforeseen negative outcomes.
T8	Free riders utilizing a public good creates frustration among those who bear the cost burden, but also strengthens budgetary support
T9	Acquisitions programs for dual-use space capabilities face structural difficulties in coordinating civil and national security requirements and funding
T10	Private sector interests have only indirect representation in the policy-making process

# Future of the space policy process

- 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?
- How will acceleration of globalization and commercialization of space technology affect the ability of a deliberative interagency process to make decisions?
- How can we learn from past space policy decisions to help make better future decisions?



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# Thank You. Questions?

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