Strategic Security: Toward an Integrated Nuclear, Space, and Cyber Policy Framework

Jason D. Wood
Policy Analyst
Nuclear Deterrence Support Division
Science Applications International Corporation (SAIC)

Project on Nuclear Issues | Fall 2010 Conference
Atomic Weapons Establishment, Aldermaston, United Kingdom
22 September 2010
How do the nuclear, cyber, and space domains interact and what are the policy implications of these interactions?
Argument

- Nuclear, cyber, and space capabilities are mutually reinforcing elements of U.S. strategic security – overlapping significantly in terms of function, shared technical capacities, and common threats/future challenges.

- Each of these domains should be integrated into an overarching policy approach that effectively coordinates U.S. nuclear, cyber, and space posture, capacities, and strategy.

- While the Obama Administration has taken some positive steps to this end, more can and must be done.
Why is this important?

Strategically, the U.S. is in a period of transition:

- Ambitious new nuclear agenda (Prague Speech, NPR, New START)
- Beginning to organize to counter cyber threat (U.S. Cyber Command, Cyberspace Policy Review)
- Space domain rapidly evolving (increasing number of actors, growing strategic importance to U.S.)

During this transitional period, it is critically important that policymakers understand how developments and decisions in one domain could have a broader impact in other strategic domains.

Failure to consider these interactions and develop an effectively integrated policy could negatively impact U.S. strategic security in the decades ahead.
Scope and Definitions

• This study *does not* recommend specific nuclear, cyber, or space strategies, doctrine, or force structure.

• This study *does* document the need for an integrated strategic security policy by: (1) highlighting areas of overlap; (2) documenting the current state-of-play in Washington; and (3) proposing a possible approach to better integrate nuclear, cyber, and space policy.

• “Strategic Security” – a more specific, longer-term concept of national security.

• “Integrated” policy is the product of a joint collaborative process, not just a briefing or ad hoc consultation.
Functional Overlap

• Space Support to the Nuclear Mission
  – Early warning (DSP, SBIRS)
  – National Technical Means (NTM) of treaty verification
  – C2
  – Ballistic missile defense (STSS)
  – Precision timing and navigation

• Space and Cyber
  – Space used to connect global cyber environments, reducing forward-deployed footprint and augmenting bandwidth where lacking
  – As the importance of space increases, so too does the need for secure satellite systems and communications links – enabled by cyber capabilities

• Cyber is increasingly ubiquitous across all domains.
Shared Technical Capacities

- Complex material and equipment manufacturing
  - Rocket propulsions systems (space launch and ICBM boosters)

- Shared need for secure, reliable, advanced information technology systems across all three domains
  - Sensitive hardware and software that must be domestically sourced
Common Threats/Challenges

• Cyber threat to U.S. nuclear, cyber, and space capabilities
  – Widely dispersed C2 nodes that are increasingly computerized

• Control of dual-use technology and intellectual property across domains
  – Growing non-state, commercial presence

• Workforce challenges
  – Sustaining a nuclear and space workforce, standing-up a well-trained cyber workforce
What is the current state-of-play?

• Assistant Secretary of Defense for Global Strategic Affairs (GSA)

• Several Posture/Policy Reviews (NPR, BMDR, Space Policy Report, Cyber Review)

• Government-wide cyber doctrine lacking, despite establishment of Cyber Command
  – Nuclear doctrine/deterrence theory not an adequate substitute

• Problems extend to acquisitions
  – Space support to the nuclear mission (AEHF/FAB-T)
The Nuclear Weapons Council (NWC) as a Template for Policy Integration

• The establishment of the NWC is an instructive case study in policy integration:
  – Formed in response to the lack of a joint DOD-DOE body to coordinate nuclear weapons program activities across the two departments.
  – Intended to forge closer integration between nuclear weapons programs and national security planning, while preserving the autonomy of DOD and DOE in their respective roles.

• Today, the NWC serves as the high-level focal point for activities and programs to maintain the U.S. nuclear stockpile:
  – An interagency forum for establishing priorities and resolving issues.
  – Develops a number of annual reports and recommendations to focus senior-level attention on nuclear weapons issues.
The Nuclear Weapons Council (NWC) as a Template for Policy Integration (2)

• The creation of GSA alone will not be a permanent solution.

• U.S. strategic security will be better-served by a formal policy framework that resembles the NWC.

• A Strategic Security Council would have the benefit of:
  – A legislative mandate, defining specific roles and responsibilities for integrating policy across the nuclear, cyber, and space domains
  – Dedicated interagency staff and subordinate action officer groups to prepare issues for high-level consideration
  – Formal procedures for a process that is current ad hoc

• Would have responsibility for producing regular, integrated reviews of U.S. strategic posture across all three domains and overseeing their implementation