Space Governance Concept & Proposal

Purpose: Lay out an ambitious idea for a radical re-organization, consolidation, and rationalization of national space capabilities and governance.

Background: Space is of vital interest to the nation. While Space is one seamless medium, and space assets and underlying technology base is inherently dual use, current national space capabilities are fragmented amongst DoD (USSTRATCOM (JSpOC), AF (AFSPC, AFRL, SMC, Ranges), Navy (NRL, SPAWAR), Army (SMDC), DARPA, MDA), NRO, NASA, NoAA. Many consider the current architecture to be sub-optimal, and in need of consolidation to reduce duplication, and maximize the use of limited resources.

Discussion: The current architecture was largely set up to cope with the problems presented by the Cold War. However, the requirements for Space pre-eminence in the coming decades are different. As the US seeks to become a *second*-generation *industrial* space power, there is a need not only do what it has always done better, but to align organizations and resources for where the US needs to go in order to lead in the new context. Specifically, the US needs to organize along the following emerging needs:

> **Move from a paradigm of Exploration to Development:** While a vision for space exploration characterized the last five decades of space, it is a vision for Space Development and the supporting space logistics infrastructure. Commanding the carrying trade and influencing the governance structure in this emerging domain is vital to winning the peace of the decades ahead.
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> **Leadership in international civil space for safety of navigation:** The US needs to configure its space organs to be able to provide the authorities and capabilities to provide a distinctive contribution to an International Civil Space Organization (analogous to ICAO), Space Traffic Management (analogous to Air Traffic Control), Active Debris Mitigation (analogous to dredging harbors).
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> **Domain Surveillance in support of transnational non-actor threats:** Space provides surveillance and warning of natural threats (extreme weather, climate change, extreme space weather, asteroid & comet impactor threats) that fall outside either the discovery science paradigm of NASA or the human-actor based threats surveiled by DNI and DoD.
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> **Strategic Development of US Commercial Space & Space Industrial Capabilities:** In the decades ahead, the role of government is to empower, promote, and regulate a commercial space industry.

What is common about space and what is different: While the purposes, objects, and authorities of the various space agencies vary, there is an inherent commonality that suggests consolidation might be possible and beneficial. Whether military, civil, or intelligence space, there appears to be significant commonality in the skills required of policymakers, operators, acquisition professionals, and space-craft and launch vehicle engineers. Both the assets, expertise, and industrial base appear to be dual-use, though the ability to leverage each other is compromised by various stovepipes. Often there is great similarity of spacecraft, sensors, launch-vehicles, and even the general classes of surveillance (the atmosphere or surface of the Earth, objects in the solar system).

Duplication is not always evil: This paper does NOT believe that consolidation is a good in and of itself. Some situations that appear like "duplication" are in fact a working evolutionary algorithm that allows parallel development and exploration of different options to discover what works and cross-pollinate or

kill less viable programs. While efficiency is a concern, the key driver for a national re-organization is the notion of "organizing for victory"—adapting your organization to best address future challenges.

The Proposal: A Department of Space, a Space Guard and a Space Corps of Engineers:

The general concept is to consolidate the oversight and expertise in three major categories that can flow between black & white space, and civil, military and intelligence space authorities and applications.

The relevant analogies are the US Coast Guard which is given authority to exercise both Title 10 (military) & Title 14 (law enforcement) authorities, and CYBERCOM, a sub-unified command where the Director is dual-hatted to do Title 10 (military), and Title 50 (intelligence) duties, SOCOM, which has limited ability to set requirements, organize, train and equip itself, and the Army's Corps of Engineers that has independent Congressional authority to do major public works.

Major portions of existing space agencies are consolidated into a uniformed and civilian-staffed US Space Guard with broad authorities similar to the US Coast Guard under the Department of Space, which provides oversight as well as commercial licensing and regulation of space-vehicles. Within the overall Space Guard is a US Space Corps of Engineers wherein resides the national capabilities to design, build, and oversee major space infrastructure and develop technology to enable US commercial space leadership.

Mission Statements:

Department of Space: Exists to ensure US pre-eminence in space, maximize the utility of space for national security, welfare, and prosperity. Organizes, trains, equips, and mans space capabilities for US national purpose.

Secretary of Space: Single voice for US Space Policy, national space enterprise oversight, and acquisition oversight

US Space Guard: The US Space Guard is the uniformed service the operates and maintains US Space assets to accomplish the roles of Space Security, Space Safety, and Space Stewardship with the following enumerated missions:

Homeland Defense Missions (Responsible to DoHS):

- Spaceport, Space Facility & Space Route Security
- Space-transiting WMD, missile and contraband warning & interdiction
- Defense Readiness
- Other Law Enforcement

Non-Homeland Defense Missions:

- Space Safety, Including:
  - Space Traffic Management (STM) and collision avoidance
  - Orbital Debris Mitigation / Active Removal
  - Van Allen Belt charging maintenance
- Search & Rescue
- Aids to Navigation (Global & CIS-Lunar Precision Navigation and Timing)
- Orbital Slot and Frequency Enforcement

- Space Environment Protection
- Planetary Protection (from Space contamination)
- Planetary Defense against Asteroid & Comet impactors
- Regulate and Promote commercial US space launch and spacecraft
- Space Services & Global Utilities supporting US commerce & economy
    - Earth Observation in support of commerce, civil planning, resource management, weather, traffic management
- Space-Launch in support of National Security
- Space-Launch in support of Space Exploration

Intelligence Missions (Responsible to the DNI):

- Earth Observation & Space Based Intelligence Systems for National Security, National Defense, and National Interest
- Space Observation & Space Based Intelligence Systems for National Security, National Defense, and National Interest

Defense Missions (Responsible through USSPACECOM to NCA):

- Space Control / Counter-Space / Space Denial
- Military C2

Commandant of US Space Guard: Responsible for oversight of black and white space operations. "Multi-hatted" as the Director of USSPACECOM to execute Military (Title 10), Intelligence (Title 50), Homeland Defense and natural disasters (Title 32), and Law Enforcement (Title 14)

Space Corps of Engineers: Provides vital space engineering services in peace and war to strengthen our nation's security, energize the economy, and reduce the risk from disaster.

- The Space Corps operates the space related National Labs for design of space-craft, space-launch, and supporting infrastructure.
- The Space Corps manages an independent budget for the advancement of space development and spacefaring through pre-competitive R&D.
- The Space Corps provides major public works and surveys to open the space frontier to commerce and enable the use of space resources
- Launch & Space Vehicle design in support of Space Exploration

USSPACECOM (A Unified or Sub-Unified Command): Provides a line of authority from the NCA to task the US Space Guard for Title 10 responsibilities. Manages the JSpOC, and is the focal point for military requirements (maintains liaison within the Pentagon).

What would happen:

- **The Dept of Space** would be Headquartered at the current NRO HQ in Chantilly VA
    - Close to the action, able to liaise with Congress, DNI, and Services
- **OSDP Strategic Policy, SAF/SP, NSSO**: All will be deliberately denuded of space policy expertise to provide a single voice within the Dept of Space.
- **USAF**
    - Releases Space Professionals to the Space Guard.

    - Release Ranges, SSA facilities, SMC, AFRL Kirtland to the Space Corps of Engineers
    - SAF/AQS moves Space Corps of Engineers
    - Releases terrestrial counter-Space / Space control to Space Guard
    - SAF/IA Space personnel and responsibilities move to Dept of Space
    - Proposed MFP-12 Acquisition budget moves to new Dept of Space
- **NASA**
    - Gives up space-related centers, ranges and personnel to Space Corps of Engineers
    - Gives up Astronauts and Space Operations to the Space Guard
    - Gives robotic exploration budget & design selection authority to NSF-Space (pass-through)
    - Facility and Personnel budget move to Space Corps of Engineers
    - Gives up Aero to FAA or USAF
- **NRO**
    - Becomes wholly incorporated into the Space Guard / Space Corps of Engineers
    - Military Intelligence Program (MIP), and National Intelligence Program (NIP) move to the Dept of Space
    - Air-related collections moves to RCO or Big Safari
- NOAA
    - PNT and Office of Space Commercialization move to Space Guard
- FAA
    - FAA/AST Office of Commercial Spaceflight move to Space Guard
- MDA
    - Space related budget and expertise move to the Space Guard
- Army
    - SMDC moves to Space Corps of Engineers
- Navy
    - NRL & Space Related assets in SPAWAR move to Space Corps of Engineers

Other Key Concepts:

- **Bonds:** Since space constitutes a national critical infrastructure, the Space Corps of Engineers should be able to finance major systems via bonds as other major infrastructure is financed.
- **Working Capital Funds:** To slow requirements growth, some sort of fee for service should be encouraged like with Airlift.
- **Multi-Year Acquisition Capital Funds:** Various users should be able to pay in annually to a multi-year savings fund for future acquisition requirements like foreign countries can into an FMS account that is interest bearing.

Arguments against:

- Re-organization is costly, takes time, and rarely fixes problems. The bureaucracies and their interests remain in place and re-spawn themselves, or re-create themselves in their old organizations (ex. Army Aviation) because they still need to look after those entities. Only the names change, the same internal problems remain.
- NASA has amazing global brand-name recognition and soft-power that could be lost in a transition to a 'securitized' command structure.
- Congress would oppose change in NASA's status as it might upset committee power and ability to control funding and jobs to facilities in their district.