Preservation of U.S. Space Leadership for National Security

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Space threats are relevant to current and future U.S. national defense objectives. In pace with unparalleled investments of spacefaring nations, technological advances and unmonitored intentions of space utilization, the key question that arises is: Are U.S. space defense resources adequate to provide sufficient national defense capabilities?

The answer is rooted in pieces of information concealed within myriad U.S. defense capillaries. Collectively, these flows of information add up to the U.S. remaining a global leader. Yet global leadership also comes with a great deal of challenges.

New developments in the global arena justify continuously re-evaluating and prioritizing national security objectives.

Since the launch of the first satellites, space endeavors have served as crucial indicators of a modern society. They are primarily divided into civil and military activities. The former makes use of space for communications, search and rescue, navigation, weather, resource and environmental mapping, and terrestrial, astronautical and astronomical research. The latter utilizes space for many of those purposes along with battlefield surveillance and targeting, precise positioning and mapping of military assets, and early air and ballistic attacks. Space also contributes to economic, medical, technological and military intelligence sectors.

Even though the advantages of space were established more than half a century ago, a new space race between spacefaring nations and an unprecedented notion to utilize space for national objectives is on the horizon. So what does it really take to maintain leadership in space?

Leadership in space requires a combination of planning, resources, technical capabilities, resilience and legal consensus. However, the complexity of maintaining leadership status is partially interlinked with economic resources. International relations also factor into space activities.

In a recent case, the use of Russian-built engines in U.S. space activities and a possible fallout between partners of the international space station raised new concerns about how future space partnerships may develop. Although it has been argued that no nation alone is capable of, for instance, ending the space station, a possible future scenario has been exposed.

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On a domestic plane, however, budgets pose new challenges for the future. Pentagon funding for space programs is projected to fall 37 percent over the next four years compared with last year's projected spending over that span. Less requested funding does not necessarily result in less funding, but again there is also a higher level of prioritization than ever before.

Despite the common perception that national defense is solely enabled through state-of-the-art technologies and sophisticated arms, there is a broader context to be considered. This platform provides a more profound glance at the capabilities of the U.S. as a nation and as a harbinger of freedom, stability and hope. The United States, a country with continuous innovative solutions; leading high-tech industries; prominent finance, business and trade capabilities; outstanding higher-education institutions; and one of the largest populations of immigrants, provides an inspirational atmosphere for enabling national defense objectives.

Arguably, the global threat map has remained steady and not necessarily increased over recent years. However, the threat scenarios are ever changing and the potential impact of an individual threat cluster becomes increasingly more severe on a daily basis.

Orbital debris is such a threat in space. Lt. Gen. John W. "Jay" Raymond of Air Force Space Command testified at a House Science, Space and Technology Committee hearing May 9 that monitoring increasingly complex traffic and debris in space is and will remain the assignment of the command as part of the Defense Department mission to ensure national security. But in some cases, budget cuts delay crucial capabilities. This has been the case for the Space Fence, a ground-based radar network designed to track space debris. While the Air Force saved $14 million last year when it shut down the original space fence, called the Air Force Space Surveillance System, the new-and-improved version in this year's budget will cost close to $2 billion.

In many national defense debates, designated countries are identified in light of particular threats such as ballistic and cruise missile technologies, unmanned aerial vehicles and other pieces of weaponry. Nonetheless, the name of a hostile entity is truly irrelevant in any emerging threat scenario. National defense systems operate most efficiently when they are designed to operate under resilient and robust modes simultaneously aware of the entire threat spectrum.

The U.S. Air Force's strategic vision for the future outlines noteworthy features of national defense systems. According to Gen. Mark A. Welsh, Air Force chief of staff, the service's five enduring core missions are: air and space superiority; intelligence, surveillance and reconnaissance; rapid global mobility; global strike; and command and control. Enabling these missions requires adequate resources. The challenges include the aftershocks of sequestration, delays and cutbacks faced by many projects. For fiscal year 2014, the Pentagon projected spending $19.2 billion on space programs in 2015 through 2018.

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But the Department of Defense's 2015 budget proposal sent to Congress in March projected spending $14 billion on space projects across the same period. Investments in space capabilities are indeed important decisions that directly tie to national defense abilities. Recently, U.S. Navy Adm. Cecil D. Haney, commander of U.S. Strategic Command, echoed many of the orbital debris concerns of Lt. Gen. Raymond and warned a Senate panel that U.S. military and intelligence satellites face a growing threat from nations actively developing counterspace capabilities.

The challenge of the modern space era is balancing budgets to meet national defense objectives. On March 4, President Barack Obama submitted to Congress a proposed defense budget of $495.6 billion for fiscal year 2015. The request was $400 million less than the enacted 2014 appropriation and was consistent with the current budget caps. The White House's Opportunity, Growth, and Security Initiative requested an additional $26 billion to address significant readiness and modernization challenges. From fiscal year 2016 to 2019, the DoD is asking for funding that exceeds the current budget caps by a total of approximately $115 billion in order to meet defense requirements. In the 2015 request, $7.5 billion is included for the Missile Defense Agency.

Contemplating the trade-offs the armed services and the larger defense sector need to make to enable this budget, it is clear that any further spending cuts would have detrimental effects on national security. Space threats represent some of the most convoluted defense scenarios in modern warfare. Hence, any limitations to U.S. capabilities in space would be a significant setback to the defense industry as a whole.

It is in the interest of each and every country to ring the bells of peace and to maintain regional stability. Moreover, U.S. presence and leadership in space will provide a gateway for ensuring and promoting these objectives. National defense capabilities are the first tools for responding to the disruptive waves of war washing over the shores of peace.

Investments in space defense and coordination of these capabilities among the U.S. armed forces reflect the price tag for threat readiness, resilience and response. Investments in national defense and space situational awareness are steps toward global peace, safer space exploration and geopolitical stability.

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