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Current US SPACE Policy and Strategy

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Abstract

In the half-century since the first launch of Sputnik 1 it has become impossible to consider economic, political, or scientific human life in the communication field without reference to outer space. As proved in the recent Iraq, Gulf, and Kosovo Wars, Space capability necessary actor of modern warfare. Space power is becoming a barometer of national power. Commercial and military activities were developed by the USA and former Soviet Union in the early days, but in the 21st Century many nation participate in space activities either directly or indirectly. While ongoing developments of outer space have contributed positively to the overall well-being of mankind, there have been mounting concerns that the last frontier may also turn into a political and economic battlefield. Numerous experts have foreseen a high possibility of a space arms race among dominating space powers such as the US and Russia and other emerging nations as they actively attempt to utilize space for military uses. Public opinion is growing with regard to increased measures through various international bodies, including the UN, in guaranteeing the peaceful use of outer space and preventing the space arms race. There is a growing public opinion that increased measures should be taken through the mediation of various international institutions, such as the UN, to guarantee the peaceful use of outer space and prevent the catastrophic outcome that may occur as a result of the space arms race. Such actions are indeed imperative as the non-weaponization of space will be a wasted effort otherwise. If we disregard this problem, people will be demised owing to the past tens years' visualized 'Star Wars' scenario. As the importance of the commercial and military aspects of space is increasing, the vulnerability to cope with threats imposed on the utilization of space still exists and must be confronted. However, it is very difficult to secure international cooperation due to the narrow view on space arms control and national security, owing to the conflict of interests among nations in regard to their development of weapons and positions they hold in the international society. The outstanding example is that The United States which has been holding the position of the most advanced space power withdrew from OST in early 2000s, which would be very harmful to the efforts of arms control in space by international community. Nevertheless, a long-term and systematical approach is essential to utilize space for peaceful purposes and establish it as a common heritage of mankind(CHM).

[Keywords] Outer Space, Arms Race, Militarization, Peaceful Use, Purposes

1. Introduction

In the half-century since the first launch of Sputnik 1 it has become impossible to consider economic, political, or scientific human life in the communication field without reference to outer

space. As proved in the recent Iraq, Gulf, and Kosovo Wars, Space capability necessary actor of modern warfare. Space power is becoming a barometer of national power. Commercial and military activities were developed by the USA and former Soviet Union in the early days, but in the

21st Century many nation participate in space activities either directly or indirectly. Because of the importance of space and security interests, China, Japan, the EU, as well as USA and Russia, spur military and commercial space development.

The military sector of the U.S.A. and the Soviet Union were in charge of the space development and they were not welcomed to discuss the prohibition of the military uses of outer space at the legal section in the COPUOS. Although both countries had common interests in securing the freedom of military uses in outer space.

2. Current US Space Policy and Strategy

Current U.S. military strategy relies on being able to project power around the world and over great distances-something space-based capabilities are uniquely able to support. But as the United States has developed more advanced national security space systems and integrated them into military operations in increasingly sophisticated ways, potential adversaries have taken notice. The U.S. military's dependence on space makes these systems a natural target for adversaries to exploit. Space is simultaneously a powerful enabler for the U.S. military and a critical vulnerability[1].

President Donald J. Trump amended the 2010 National Space Policy on Monday, December 14, 2017[2]. President Trump amended the 2010 National Space Policy to redirect the United States to go back to the Moon through the "Presidential Memorandum on Reinvigorating America's Human Space Exploration Program," also commonly referred to as Space Policy Directive 1. The directive dictates that a section of the 2010 National Space Policy be deleted and replaced with new language to ensure that NASA and the U.S. government aim to send Americans back to the Moon first before pursuing deep space exploration, including Mars. These 63 words could signal a significant shift in the goals and direction of NASA, a \$19 billion government agency. In 2010, the Obama administration cancelled NASA's Constellation Program, started under the George W. Bush administration, due to

budgetary and scheduling concerns. The Constellation Program began in 2005 in the wake of the Columbia accident with the goal of sending Americans back to the Moon and establishing a lunar base before sending humans to Mars. Despite its cancellation, some aspects of the Constellation survived, such as the Orion Crew Capsule. Congress and the Obama administration redirected NASA to develop the Space Launch System with the intent of sending humans beyond low-Earth orbit.

President Donald J. Trump is Unveiling an America First National Space Strategy on March 23, 2018[3]. He announced as follows;

"Our travels beyond the Earth propel scientific discoveries that improve our lives in countless ways here, right here, at home: powering vast new industry, spurring incredible new technology, and providing the space security we need to protect the American people." It will be concrete strategy.

AMERICA FIRST AMONG THE STARS: President Trump's National Space Strategy works within his broader national security policy by putting America's interests first.

SPACE PREMINENCE THROUGH THE AMERICAN SPIRIT: President Trump's National Space Strategy harnesses the American spirit and continues the American tradition of pioneering and exploration.

PEACE THROUGH STRENGTH: President Trump's space strategy builds on the National Security Strategy emphasizing peace through strength in the space domain.

FOUR PILLARS FOR A UNIFIED APPROACH: President Donald J. Trump's new National Space Strategy drives a whole-of-government approach to United States leadership in space, in close partnership with the private sector and our allies, and is based on four essential pillars:

- Transform to more resilient space architectures: We will accelerate the transformation of our space architecture to enhance resiliency, defenses, and our ability to reconstitute impaired capabilities.
- Strengthen deterrence and warfighting options: We will strengthen U.S. and allied options to deter potential adversaries from extending conflict into space and, if deterrence fails, to counter threats used by adversaries for hostile purposes.
- Improve foundational capabilities, structures, and processes: We will ensure effective space operations through improved situational awareness, intelligence, and acquisition processes.
- Foster conducive domestic and international environments: We will streamline regulatory frameworks, policies, and processes to better leverage and support U.S. commercial industry, and we will pursue bilateral and multilateral engagements to enable human exploration, promote burden sharing and marshal cooperative threat responses.

A NEW DIRECTION FOR U.S. SPACE: President Trump has already taken significant steps to reorient American space policy and set it on the right path for the future.

Also, President Donald Trump directed officials Monday (June 18, 2018) to establish a military Space Force before signing a new U.S. policy for space traffic control[4]. The measure, he said, is another step forward in U.S. leadership in space.

Trump spoke at the third public meeting of the newly-reinstated National Space Council, chaired by Vice President Mike Pence and hosted at the White House, and officially signed the council's third space policy directive. This document concerns monitoring objects in orbit and sharing the information so spacecraft can avoid collisions. But near the beginning of his re-

marks, Trump focused on the security implications of operating in space. He then directed the Department of Defense and the Pentagon to establish a Space Force as the sixth branch of the armed forces.

A war in outer space sounds like the stuff of science fiction but it is something we need to consider. Its impact on everybody on Earth and its implications for future human space exploration would be devastating. In June this year, U.S. Secretary of the Air Force Heather Wilson said a future war in space is likely and the U.S. is investing heavily in maintaining its military dominance in space. She commented: We must expect that war, of any kind, will extend into space in any future conflict, and we have to change the way we think and prepare for that eventuality. The first Gulf War in 1991 has often been called the first space war, though it wasn't actually fought in outer space. Rather, the U.S. and coalition forces relied heavily on GPS and other satellite technology to conduct that conflict. Since then, space-based assets have enabled even greater capability for land, sea and air forces. Given the dual use of many satellites, an armed conflict in space could be catastrophic to modern life. The United States has had established doctrine and policy on counterspace capabilities for several decades, although not always publicly expressed. Most recent U.S. presidential administrations have directed or authorized research and development of counterspace capabilities, and in some cases greenlit testing or operational deployment of counterspace systems. These capabilities have typically been limited in scope, and designed to counter a specific military threat, rather than be used as a broad coercive or deterrent threat. For example, a series of policy memos in the mid-1970s recommended the development of a limited offensive counterspace capability to destroy a limited number of militarily-important Soviet space systems in a crisis situation or war.²⁷⁵ The

goal was to not to deter the Soviets from attacking U.S. space capabilities, but rather create the capability to reduce the Soviet ability to use space against the United States in a conflict, while limiting escalation against U.S. satellites to those in low Earth orbit. The memos specifically highlighted the use of Soviet space systems for targeting long-range anti-ship missiles against U.S. naval forces as the most critical capability to counter. The memos culminated in presidential decision directives by the Ford and Carter Administrations to develop a limited ASAT capability, along with complementary space arms control initiatives.

To that end, the 2010 policy directs the Secretary of Defense shall “develop capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems,” and “develop capabilities, plans, and options to deter, defend against, and, if necessary, defeat efforts to interfere with or attack U.S. or allied space systems.” The link between these policy statements and offensive counterspace capabilities can be found in the official U.S. military doctrines on space operations. Two different doctrines exist on space operations: an Air Force doctrine developed by United States Air Force Space Command; and a joint doctrine developed by United States Strategic Command. Under current doctrine, the U.S. military considers space control to be a separate mission area of space operations. Space control consists of defensive space control(DSC) and offensive space control(OSC), both of which are supported by SSA. DSC consists of active and passive actions to protect friendly space-related capabilities from enemy attack or interference by protecting, preserving, recovering, and reconstituting friendly space-related capabilities before, during, and after an attack by an adversary. OSC consists of offensive operations to prevent an adversary's hostile use of U.S./third-party space capabilities or negate an adversary's

space capabilities. Prevention can occur through diplomatic, informational, military, and economic measures, and negation can occur through active offensive and defense measures for deception, disruption, denial, degradation, or destruction. Ground and space-based SSA capabilities are used to find, fix, track, and target adversary space system, and assess the effects of OSC operations. OSC actions may target space nodes, terrestrial nodes, and/or communications links. To the greatest extent practicable, U.S. forces are to use OSC systems and methods which minimize risk to friendly forces, civilians, and civilian property. Since 2014, U.S. policymakers have placed increased focus on space security, and have increasingly talked publicly about preparing for a potential “war in space” and about space being a “warfighting domain”. Between May and August 2014, the Department of Defense convened a Space Strategic Portfolio Review(SCR), which concluded there was a need to identify threats in space, be able to withstand aggressive counterspace programs, and counter adversary space capabilities. Following the SCR, senior military leadership began to talk publicly about the inevitability of conflict on earth extending to space and the need for the military to prepare to defend itself in space. There was also increased focus on preparing to “fight a war in space”, even though senior U.S. military leaders expressed no desire to start one. A similar shift in tone can also be seen in academic writings from U.S. military journals calling for renewed focus on fighting wars in space and offensive space control. The U.S. Congress also weighed in, calling for a study on how to deter and defeat adversary attacks on U.S. space systems, and specifically the role of offensive space operations. This shift in rhetoric has been accompanied by changes to the national security space organization. A new facility, originally called the a Joint Interagency Combined Space Operations Center(JICSpOC) and later renamed to the National Space Defense Center(NSDC), was created

to improve collaboration between military and intelligence communities to respond to attacks in space and became operational in January 2018. The U.S. Congress also criticized the Air Force for its handling of space programs and forced a debate over reorganizing national security space, potentially by created a separate entity such as a Space Corps[5].

3. US Space Budget

Despite this increased rhetoric, the unclassified U.S. national security space budget contains a relatively small amount of funding for dedicated counterspace programs but has seen recent increases. Between fiscal year(FY) 16 and FY17, the total unclassified research, development, testing, and evaluation(RDT&E) budget for counterspace programs increased from \$24.1 million to \$41.9 million, and it increased again in FY18 to \$68.38 million. Nearly all of the increase[6].

The FY18 budget also included \$28.8 million to purchase two new 10.2 versions of CCS for active duty Air Force and Air National Guard units.293 It is possible that additional dedicated counterspace programs, and possibly programs with potential counterspace utility, are funded through the classified budget. The United States also spends nearly \$8 billion a year on missile defense capabilities, several of which could have counterspace applications.

The United States has also held multiple wargames and exercises over the last 25 years to practice and refine its counterspace doctrine. The most well-known is the Schriever Wargame, which began in the mid-1990s as a biennial tabletop exercise to look at how advanced space technologies influenced future conflicts in space. In recent years, the Schriever Wargame has become an annual event that also explored policy

and strategy issues, diplomatic, economic, military, and information activities, and included participation from a growing number of allied military and commercial partners. The 2017 Schriever Wargame looked at scenario in the year 2027 involving a notional peer space and cyberspace competitor in the Pacific Area of Responsibility, and included participation from Australia, Canada, New Zealand and the United Kingdom. In 2017, the USAF also held the first Space Flag exercise. Modeled after the USAF's Red Flag air combat exercise at Nellis Air Force Base, the Space Flag exercise focused on practicing and training for space warfare. The USAF says it expects to hold future Space Flags biannually.

Figure 1. U.S. Defense Department contract renewals for Eutelsat satellite bandwidth.

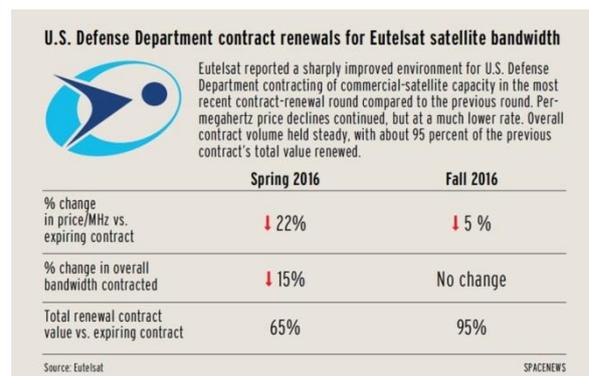
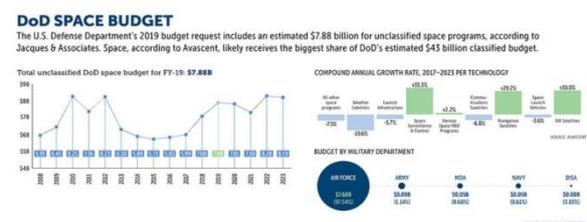


Figure 2. DoD Space Budget.



4. Conclusion

Nowadays, US enlargement space force in view of strategy and budget. Especially, President Trump push ahead space power and want to hold dominant position on outer space. Also many state jump on space arms race.

Therefore we concern about arms race on outer space. We must address arms race on outer space.

As you know, while ongoing developments of outer space have contributed positively to the overall well-being of mankind, there have been mounting concerns that the last frontier may also turn into a political and economic battlefield. Numerous experts have foreseen a high possibility of a space arms race among dominating space powers such as the US and Russia and other emerging nations as they actively attempt to utilize space for military uses. Public opinion is growing with regard to increased measures through various international bodies, including the UN, in guaranteeing the peaceful use of outer space and pre-venting the space arms race. Numerous experts have foreseen a high possibility of a space arms race among dominating space powers such as the US and Russia and other emerging nations as they actively attempt to utilize space for military uses. Public opinion is growing with regard to increased measures through various international bodies, including the UN, in guaranteeing the peaceful use of outer space and preventing the space arms race.

There is a growing public opinion that increased measures should be taken through the mediation of various international institutions, such as the UN, to guarantee the peaceful use of outer space and prevent the catastrophic outcome that may occur as a result of the space arms race. Such actions are indeed imperative as the non-weaponization of space will be a wasted effort otherwise. If we disregard this problem, people will be demised owing to the past tens years' visualized 'Star Wars' scenario. As the importance of the commercial and military aspects of space is increasing, the vulnerability to cope with threats imposed on the utilization of space still exists and must be confronted. However, it

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