# Neg - Cyber Space Assets - BFHR 7wk

### notes

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## Case

### 1NC---ASATs---China ASAT Defense

#### China won’t use ASATs.

Gregory Kulacki, 16 (Gregory Kulacki is an expert on cross-cultural communication between the United States and China and is the China project manager and senior analyst at UCS, 9-7-2016, accessed on 6-25-2022, Union of Concerned Scientists, “The United States, China, and Anti-Satellite Weapons”, <https://allthingsnuclear.org/gkulacki/the-united-states-china-and-anti-satellite-weapons/>, HBisevac)

Although Chinese research, development and testing of ASAT capabilities continues there is no indication Chinese military planners intend to launch a pre-emptive strike against US satellites at the beginning of a future war with the United States. Moreover, Chinese military strategists **do not see** the US military use of satellites as a **weakness** they can **exploit**. To the contrary, they see it as a strength they should emulate. Nevertheless, US concerns about a Chinese “space Pearl Harbor” attack on US satellites continue to cast a large shadow over US perceptions of Chinese space policy and programs.

Consequential Chinese Realities

Over the past 16 years China steadily increased the number and capabilities of its satellites.

The first US warnings of a Chinese ASAT attack came at a time when China had no significant presence in space. Today China ranks second, behind the United States, in the number of functioning satellites on orbit. The planned introduction of a new generation of launch vehicles capable of placing heavier payloads into space suggests the number of functioning Chinese satellites will continue to increase. Congressionally imposed restrictions on civil and scientific cooperation with China make it difficult for US observers to assess progress in the quality and capabilities of Chinese satellites. But accounts of Chinese cooperation with the European Space Agency and media reports on advances in Chinese satellite technology suggest the quality of Chinese satellites is increasing at a rate comparable to the increase in quantity.

The military value of China’s satellites is arguably much greater than the value of its ASAT research, development and testing program. Satellites are a force multiplier that use the inherent advantages of space to augment the communication, command, control, intelligence, reconnaissance, surveillance and navigation functions of military forces on earth. In addition to helping Chinese commanders control their own forces, satellites can significantly increase their ability to find US forces over very large areas, track their movement, guide munitions to these targets and assess the damage afterwards.

US Turning the Table on Chinese ASATs

A recent US study of the technologies likely to be employed in a future war in the Western Pacific suggests that instead of being a trump card that a militarily weaker China might use to defeat a stronger United States, ASAT weapons could play a **key role** in helping the United States **contain China**. This is because satellites make it possible for China to threaten US and allied ships sailing thousands of kilometers away from Chinese shores. As the study states:

“…the United States enjoys a variety of alternatives to military satellites that could **allow operations** even **without it**. For the Chinese, by contrast, survivable sea-surveillance radar satellites would make the **difference** between accepting a U.S. sphere of influence covering much of the Western Pacific and the **opportunity** to **threaten** U.S.-allied commerce out to or beyond the Second Island Chain. For China, the military difference between satellites and their absence is thus **important** in ways that go **far beyond efficiency**. “

In other words, China’s **military dependence** on satellites may be **greater** than that of the United States. Perhaps that is why some US officials argue the United States should refuse to support international efforts to place limits on the use of anti-satellite weapons.

### 2NC---ASATs---China ASAT Defense

#### Space pearl harbor risk low.

Belinda Bragg 17, NSI principle research scientist, December, “Leveraging Allied and Commercial Capabilities to Enhance Resilience,” http://nsiteam.com/social/wp-content/uploads/2017/12/NSI\_Space\_ViTTa\_Q11\_Allied-and-Commerical-for-Resilience\_FINAL.pdf

In-space manufacturing is another field of space development that can bring new capabilities currently unaccounted for the space security sector planning. Large aperture satellites with tens of kilowatts of electrical power and extremely large antennas can overcome jamming. Large space platforms in geosynchronous orbit with tens to hundreds of kilowatts of power can host a multiplicity of payloads, which can be upgraded, refueled, and re-tasked, providing capabilities unheard today. Such large platforms can have defensive mechanisms to protect itself from all but the most determined attacks. Skycorp is developing lightweight highly maneuverable solar electric propulsion vehicles that are the world’s first reusable systems. Our internal systems architecture roadmap and cost analysis indicates that reusable spacecraft have lifecycle cost reduction potential exceeding 80% through re-provisioning, modularity, and interchangeable payload modules. These systems, soon to be built on the International Space Station (2020 timeframe), first deploying commercial communications payloads, will help to correct the growing imbalance between terrestrial and space communications customer pricing. A highly maneuverable spacecraft with ion propulsion would simply be able to move out of the way of most ballistic threats, thus passively defeating attacks. The more systems that can be built with characteristics that diminish the effectiveness of growing adversary ballistic anti-space systems, the more robust our resiliency is, which helps to lower fears of a Space Pearl Harbor. This, along with the other capabilities outlined in this missive, if implemented, neuter current threats. These capabilities help reduce global instability and help maintain our national security space systems superiority without resorting to developing offensive space systems.

#### No ASATs---worse for everyone.

Rich Wordsworth 16, UK journalist, and write for Gizmodo, Kotaku and Vice, “Why We'll Never Fight a Real-Life Star Wars Space Conflict”, 18/12/2016, <http://www.gizmodo.co.uk/2015/12/why-well-never-fight-a-real-life-star-wars-space-conflict>

So Why Won’t It Happen? Well, never say never. You might not make to the end of this paragraph before the sky lights up and the world goes dark. But there are some good reasons to be optimistic that won’t happen. One reassuring factor is that the more other countries develop their militaries, the more dependent on networks they become as well. China is developing its own drone programme, and so is Russia, which will both presumably be dependent on satellites to operate. And the more their (and our) economies and business interests develop, the more everyone will rely on satellites to further their economic ambitions. In the event that countries were to start knocking out each other’s satellites on a large scale, the consequences across the board – for everyone – would be disastrous. It would also be expensive in the short term. Getting things into orbit – peaceful or otherwise – still isn’t cheap, which is why only a handful of countries regularly do so. And if you want to blow up a network of many satellites today (as you would have to in a first strike, to ensure other satellites couldn’t pick up the slack), launching small satellites or missiles into orbit is the only practical way to do that – arming satellites with their own weaponry just isn’t financially or technologically feasible on a grand scale. We are, happily, a long way from a Death Star. “I don’t think [a large first strike] would be financially too costly [if you’re] thinking about kinetic energy weapons and the air-based or ground-based lasers,” says Jasani. “It’s viable. But if you say, ‘I’m going to put an [ASAT] weapon [permanently] in orbit’, we are then getting into very expensive and very complicated technology. So my guess is that in the foreseeable future, what we are going to focus on are the kinetic energy weapons and possibly lasers that could blind satellites or affect, for example, the solar panels. That kind of technology will be delivered in the foreseeable future, rather than having lasers in orbit [like] the Star Wars kind of thing.” But there’s another, possibly even more persuasive reason that a kinetic war in space may not happen: it’s just so much easier – and less damaging – to mess with satellites without getting close to them. “Jamming from the ground is not difficult,” says Quintana. “If you look at the Middle East, pick a country where there’s a crisis and the chances are that the military in that country has tried to jam a commercial satellite to try and avoid satellite TV channels broadcasting anti-government messages.” “My guess is that by the time we are ready for space warfare, I think you may not be banking on your hit-to-kill ASATs, but more on [non-destructive] high-energy laser-based systems,” Jasani agrees. “[Space debris] affects all sides, not just the attacked side. The attacking side will have its own satellites in orbit, which might be affected by the debris [of its own attack].” And if you really need to remove an enemy’s satellite coverage, you can always try to flatten or hack the control stations on the ground, leaving the satellites talking with no-one to listen. “I don’t think physically blowing things up from the ground is something that people are looking at again,” says Quintana. “Countries and governments try to find means other than physical conflict to achieve their strategic ends. So as space becomes more commercial and more civilian and as more scientific satellites go up, then you’ll find that states will not seek to directly attack each other, but will seek other means. “It may just be that they will try to cyber-attack the satellites and take them over, which has been done in the past. It’s much easier to physically or cyber-attack the ground control station than it is to attack the satellite itself - so why would you not look to do that as a first port of call and achieve the same ends?” Ultimately, then, what might keep us safe from a war in space isn't the horror of explosives in orbit, but a question of cost and convenience.

**No ASATs and redundancy and resiliency solves**

Brian D. **Green 16**, LLM from McGill University, JD from the University of Virginia, BA from the University of Washington, Chief of Space and International Law, Headquarters 14th Air Force (AFSTRAT) / Joint Functional Component Command for Space (JFCC SPACE), Vandenberg Air Force Base, “Space Situational Awareness Data Sharing: Safety Tool or Security Threat?”, Air Force Law Review, 75 A.F. L. Rev. 39, Lexis

D. ASAT Implications for SSA Data Sharing

Given humanity's history of ASAT weapons tests, how should SSA data sharing policies be shaped today? Does the fact that ASAT weapons have been developed and successfully tested mean that they will inevitably be used in war, or are there reasons to discount that risk? Do the safety gains from broader and more timely sharing of SSA data outweigh the risks that some of those data could be used to target an ASAT attack? Or might expanded SSA about enemy capabilities and intentions provide a strong enough foundation to exercise deterrent options that would otherwise be unavailable? This article will now evaluate arguments that minimize the likelihood of an ASAT attack and explain why the ASAT threat remains real.

1. Factors Discouraging ASAT Use

If an ASAT weapon is ever used as an act of war, its use is likely to be **significantly more difficult** than any of the ASAT tests conducted to date. In the tests, states have targeted their **own assets only**, and in many cases have launched the ASAT weapon and its target together in **close proximity**. Belligerents will **not always have those luxuries**, especially as satellite operators improve the **encryption** of their signals and their own SSA capabilities, and employ strategies such as **disaggregating** satellite functions and using civilian commercial satellites, sometimes from neutral or friendly countries, for military purposes. 228

In addition, there are the **moral, legal, political, and practical considerations** that weigh against using at least a kinetic ASAT. Most countries with space programs advanced enough to field an ASAT weapon will **not want to set a precedent** that legitimizes a retaliatory ASAT attack on their own **sat**ellite**s**, and they will also have [\*78] to consider the likely effects of **debris** from their attack against their own and their allies' space assets in the future. For an advanced space power, threatening to destroy satellites in order to deter ASAT attacks by a less-developed space power would be the strategic equivalent of **"threatening a chess opponent's knight in hopes of deterring him from taking your queen."** 229 Another analogy might be that of **using a hand grenade to defend one's home from a burglar**: self-defense may well be justified, but the defensive weapon would **cause so much collateral damage** and even **self-harm** that it would **not make sense to use it** in most circumstances. Moreover, some of the most sensitive military **sat**ellite**s** are located in **GSO**, where the **costs** of sending an ASAT missile are **much higher** and the costs of **international censure** much higher given the GSO's distance and importance as a limited natural resource. 230

In an effort to reduce the expected utility of an ASAT attack (as well as damages from an accidental collision or space weather event), the **U**nited **S**tates is seeking to **spread out** and **distribute** its space-based capabilities so as to ensure **resiliency** and continued service **even if** an individual satellite or set of satellites is knocked out. 231 Just as Iridium kept a spare satellite in orbit that it moved to fill the void left by the Iridium-33 in February 2009, the GPS constellation includes a **number of spares**, and the U.S. military is reportedly examining concepts to launch as many as 3,000 small **"cubesats"** over the next few years to improve the resiliency of its satellite capabilities. 232 Other countries could also implement similar "hedging" strategies.

**Neither the U.S. nor China will test again**

Dr. Mark **Gubrud 7**, Adjunct Professor in the Peace, War, and Defense Curriculum at the University of North Carolina, Contributor to the Futurisms Blog of The New Atlantis, PhD in Experimental Physics from the University of Maryland, May 2007, “Letter to the Editor,” Arms Control Today, https://www.armscontrol.org/print/2360

Some strong arguments support proposals to focus attention on kinetic energy ASATs. Such weapons, which directly strike targets at high speeds, create large amounts of persistent orbital debris, an increasingly serious threat to all traffic in space. China’s addition to the debris burden has been condemned worldwide and has raised the concern that further tests, or a war in space using such weapons, might render space unusable for military or civilian purposes. The U.S. military shares this concern, has not tested a kinetic-energy weapon against an orbital target in over **two decades**, and apparently **does not plan to do so in the future**. Given that at least a live-impact testing ban would be highly verifiable (since it is impossible to hide the debris shower), the U.S. military might not object to such a ban, particularly if framed as a debris-control measure rather than as arms control. Yet, **even in the absence of such a ban**, China will likely judge that the **p**ublic **r**elations costs of further orbital impact tests **outweigh any military gains**. As Forden states, the weapon can be tested adequately in **close flybys**, including at **high** (e.g., **geosynchronous) altitudes**, and can be impact tested against suborbital targets, at high closing speeds as the **U**nited **S**tates does, with its missile defense tests. Forden proposes criteria that would ban the former but would permit the latter. Under such rules, terminal homing systems could be **perfected openly**. Intermediate-range target acquisition and tracking systems could be tested in low-closing-speed rendezvous operations, since high-speed flybys are not needed to verify their performance at the required updating rates. Thus, the **further development of kinetic-energy ASAT technology would not be blocked**.

### 1NC---ASATs---No Miscalc/Escalation

**No miscalc or escalation**

James **Pavur 19**, DPhil Researcher at the Cybersecurity Centre for Doctoral Training at Oxford University, and Ivan Martinovic, Professor of Computer Science in the Department of Computer Science at Oxford University, “The Cyber-ASAT: On the Impact of Cyber Weapons in Outer Space”, 2019 11th International Conference on Cyber Conflict: Silent Battle, https://ccdcoe.org/uploads/2019/06/Art\_12\_The-Cyber-ASAT.pdf

A. Limited Accessibility

Space is difficult. Over 60 years have passed since the first Sputnik launch and only nine countries (ten including the EU) have orbital launch capabilities. Moreover, a launch programme alone does not guarantee the **resources** and **precision required** to **operate a meaningful ASAT capability**. Given this, one possible reason why **space wars have not broken out** is simply because only the US has ever had the ability to fight one [21, p. 402], [22, pp. 419–420].

Although launch technology may become cheaper and easier, it is unclear to what extent these advances will be distributed among presently non-spacefaring nations. **Limited access to orbit** necessarily reduces the scenarios which could plausibly escalate to ASAT usage. Only major conflicts between the handful of states with ‘space club’ membership could be considered possible flashpoints. Even then, the **fragility of an attacker’s own space assets** creates **de-escalatory pressures** due to the **deterrent effect of retaliation**. Since the earliest days of the space race, dominant powers have recognized this dynamic and demonstrated an inclination **towards de-escalatory space strategies** [23].

B. Attributable Norms

There also exists a **long-standing normative framework** favouring the **peaceful use of space**. The effectiveness of this regime, centred around the Outer Space Treaty (**OST**), is highly contentious and many have pointed out its serious legal and political shortcomings [24]–[26]. Nevertheless, this status quo framework has somehow supported over **six decades of relative peace** in orbit.

Over these six decades, **norms have become deeply ingrained** into the way states describe and perceive space weaponization. This de facto codification was dramatically demonstrated in 2005 when the US found itself on the short end of a 160-1 UN vote after opposing a non-binding resolution on space weaponization. Although states have occasionally pushed the boundaries of these norms, this has typically occurred through incremental legal re-interpretation rather than outright opposition [27]. Even the most notable incidents, such as the 2007-2008 US and Chinese ASAT demonstrations, were couched in rhetoric from both the norm violators and defenders, depicting space as a peaceful global commons [27, p. 56]. Altogether, this suggests that **states perceive real costs** to breaking this normative tradition and may even **moderate their behaviours** accordingly.

One further factor supporting this norms regime is the **high degree of attributability** surrounding ASAT weapons. For kinetic ASAT technology, **plausible deniability** and **stealth** are essentially **impossible**. The literally explosive act of launching a rocket cannot evade detection and, if used offensively, retaliation. This imposes **high diplomatic costs** on ASAT usage and testing, particularly during peacetime.

C. Environmental Interdependence

A third stabilizing force relates to the **orbital debris consequences** of ASATs. China’s 2007 ASAT demonstration was the largest debris-generating event in history, as the targeted satellite dissipated into thousands of dangerous debris particles [28, p. 4]. Since debris particles are indiscriminate and unpredictable, they often threaten the attacker’s own space assets [22, p. 420]. This is compounded by Kessler syndrome, a phenomenon whereby orbital debris ‘breeds’ as large pieces of debris collide and disintegrate. As space debris remains in orbit for hundreds of years, the **cascade effect** of an ASAT attack can constrain the attacker’s long-term use of space [29, pp. 295– 296]. Any state with kinetic ASAT capabilities will likely also operate satellites of its own, and they are necessarily exposed to this collateral damage threat. Space debris thus acts as a strong strategic deterrent to ASAT usage.

### 1NC---ASATs---Non-Kinetic Escalation Defense

#### Non-kinetic escalation is a myth.

Erica Lonergan, 4-15 (Erica Lonergan is Assistant Professor in the Army Cyber Institute at West Point and a Research Scholar at the Saltzman Institute of War and Peace Studies at Columbia University and previously served as Senior Director on the U.S. Cyberspace Solarium Commission, 4-15-2022, accessed on 6-8-2022, Foreign Affairs, “The Cyber-Escalation Fallacy”, <https://www.foreignaffairs.com/articles/russian-federation/2022-04-15/cyber-escalation-fallacy>, HBisevac)

In fact, the negligible role of cyberattacks in the Ukraine conflict should come as no surprise. Through war simulations, statistical analyses, and other kinds of studies, scholars have found little evidence that cyber-operations provide effective forms of coercion or that they cause escalation to actual military conflict. That is because for all its potential to disrupt companies, hospitals, and utility grids during peacetime, cyberpower is **much harder** to use against targets of **strategic significance** or to **achieve outcomes** with **decisive impacts**, either on the battlefield or during crises short of war. In failing to recognize this, U.S. officials and policymakers are approaching the use of cyberpower in a way that may be doing **more harm than good**—treating cyber-operations like any other weapon of war rather than as a nonlethal instrument of statecraft and, in the process, overlooking the **considerable opportunities** as well as **risks** they present. Much of the current understanding in Washington about the role of cyber-operations in conflict is built on long-standing but **false assumptions** about cyberspace. Many scholars have asserted that cyber-operations could easily lead to military escalation, up to and including the use of nuclear weapons. Jason Healey and Robert Jervis, for example, expressing a widely held view, have argued that an incident that takes place in cyberspace, “might cross the threshold into armed conflict either through a sense of impunity or through miscalculation or mistake.” Policymakers have also long believed that cyberspace poses grave perils. In 2012, Secretary of Defense Leon Panetta warned of an impending “cyber-Pearl Harbor,” in which adversaries could take down critical U.S. infrastructure through cyberattacks. Nearly a decade later, FBI Director Christopher Wray compared the threat from ransomware—when actors hold a target hostage by encrypting data and demanding a ransom payment in return for decrypting it—to the 9/11 attacks. And as recently as December 2021, Secretary of Defense Lloyd Austin noted that in cyberspace, “norms of behavior aren’t well-established and the risks of escalation and miscalculation are high.” Seemingly buttressing these claims has been a long record of cyber-operations by hostile governments. In recent years, states ranging from Russia and China to Iran and North Korea have used cyberspace to conduct large-scale espionage, inflict significant economic damage, and undermine democratic institutions. In January 2021, for example, attackers linked to the Chinese government were able to breach Microsoft’s Exchange email servers, giving them access to communications and other private information from companies and governments, and may have allowed other malicious actors to conduct ransomware attacks. That breach followed on the heels of a Russian intrusion against the software vendor SolarWinds, in which hackers were able to access a huge quantity of sensitive government and corporate data—an espionage treasure trove. Cyberattacks have also inflicted significant economic costs. The NotPetya attack affected critical infrastructure around the world—ranging from logistics and energy to finance and government—causing upward of $10 billion in damage. But the **assumption** that cyber-operations play a central role in either **provoking** or **extending war** is **wrong**. **Hundreds** of cyber-incidents have occurred between rivals with **long histories** of tension or even conflict, but **none** has **ever** **triggered** an **escalation** to war. **No**rth **Ko**rea, for example, has conducted **major** cyberattacks against **So**uth **Ko**rea on at least four different occasions, including the “Ten Days of Rain” denial of service attack—in which a network is flooded with an overwhelming number of requests, becoming temporarily inaccessible to users—against South Korean government websites, financial institutions, and critical infrastructure in 2011 and the “Dark Seoul” attack in 2013, which disrupted service across the country’s financial and media sectors. It would be reasonable to expect that these operations might **escalate** the situation on the **Korean Peninsula**, especially because North Korea’s war plans against South Korea reportedly involve cyber-operations. Yet that is **not what happened**. Instead, in each case, the South Korean response was minimal and limited to either direct, official attribution to North Korea by government officials or more indirect public suggestions that Pyongyang was likely behind the attacks. Similarly, although the United States reserves the right to respond to cyberattacks in any way it sees fit, including with military force, it has until now relied on economic sanctions, indictments, diplomatic actions, and some reported instances of tit-for-tat cyber-responses. For example, following Russia’s interference in the 2016 U.S. presidential election, the Obama administration expelled 35 Russian diplomats and shuttered two facilities said to be hubs for Russian espionage. The Treasury Department also levied economic sanctions against Russian officials. Yet according to media reports, the administration ultimately rejected plans to conduct retaliatory cyber-operations against Russia. And although the United States did use its own cyber-operations to respond to Russian attacks during the 2018 midterm elections, it limited itself to temporarily disrupting the Internet Research Agency, a Russian troll farm. These measured responses are not unusual. Despite decades of malicious behavior in cyberspace—and no matter the level of destruction—cyberattacks have **always** **been contained** **below** the level of **armed conflict**. Indeed, researchers have found that major adversarial powers across the world have routinely **observed** a “firebreak” between cyberattacks and conventional military operations: a **mutually understood line** that **distinguishes strategic interactions** above and below it, similar to the threshold that exists for the employment of nuclear weapons.

### 1NC---ASATs---Russian Cyber Attacks Defense

#### No Russia cyber-attacks.

Josephine Wolff, 3-2 (Josephine Wolff is an associate professor of cybersecurity policy at the Tufts Fletcher School of Law and Diplomacy, 3-2-2022, accessed on 6-24-2022, Time, “Why Russia Hasn't Launched Major Cyber Attacks Since the Invasion of Ukraine”, https://time.com/6153902/russia-major-cyber-attacks-invasion-ukraine/, HBisevac)

But as the invasion continues with **few signs** of any **sophisticated cyber conflict**, it seems **less and less likely** that Russia has significant cyber capabilities in reserve, ready to **deploy** if needed. Instead, it begins to look like Russia’s much **vaunted** cyber capabilities have been **neglected** in recent years, in favor of developing less expensive, **less effective** cyber weapons that cause less widespread damage and are considerably easier to contain and defend against. For instance, many of the cyberattacks directed at Ukraine in the past month have been relatively basic distributed **d**enial-**o**f-**s**ervice attacks, in which hackers bombard Ukrainian government websites and servers with so much online traffic that those servers cannot respond to legitimate users and are forced offline for some period of time. Denial-of-service attacks can be effective for short-term disruptions but they’re hardly a new or impressive cyber capability—in fact, they’re what Russia used to target Estonia more than a decade ago in 2007. Moreover, launching these types of attacks requires **no sophisticated** technical **capabilities** or discovery of new vulnerabilities, and they typically have fairly **contained impacts** on the specific, targeted computers. Similarly, recent reports that Belarusian hackers are trying to phish European officials using compromised accounts belonging to Ukrainian armed services members suggests that not only are these efforts relying on fairly basic tactics like phishing emails, they are not even being carried out by Russian military hackers directly.

### 2NC---ASATs---Russian Cyber Attacks Defense

#### No Russia attacks.

Kate Lee, 21 (Kate E. Lee, Captain for the U.S Air Force, March 2021, accessed on 6-24-2022, SQUADRON OFFICER SCHOOL AIR UNIVERSITY ADVANCED RESEARCH, “The Future of Warfare and Russian Engagement in Space”, <https://www.airuniversity.af.edu/Portals/10/ISR/student-papers/AY21-22/FutureofWarfareandRussianEngagementinSpace_Lee.pdf>, HBisevac)

In its 2020 Global Counterspace Capabilities assessment, the Secure World Foundation noted there was “significant evidence that Russia is actively employing counterspace capabilities in current military conflicts.”xvi Current Russian counterspace capabilities include various kinetic systems, directed energy weapons, and other tools of electronic and cyber warfare. Russia has tested direct-ascent ASAT missiles intended to intercept targets in low-Earth orbit (LEO) on several occasions. xvii Russia has also developed and launched several satellites that have demonstrated the ability to rendezvous with other space objects.xviii The maneuvering and rendezvous ability demonstrated by these satellites could be applied to co-orbital ASAT capabilities, such as satellites that are capable of docking and physically interfering with others.xix Ultimately, however, a kinetic ASAT capability is **unlikely** to be Russia’s weapon of choice in a near-future space conflict, given Russian **leadership’s assessment** that its conventional **military power** is inferior to that of the U.S. and NATO, which would make a direct competition of power a **losing game**.xx Further, if there is anything the Kremlin learned from its warfare in Ukraine, it is that **open aggression** should be **avoided**, as it will **preclude** the state from **denying responsibility** for armed conflict.xxi A kinetic counterspace attack would be relatively easy to attribute to a particular actor—using one would paint Russia as an **antagonist** and draw **unwelcome scrutiny**.

#### No chance of Russian cyber-attacks.

Rob Kuznia, 3-16 (Rob Kuznia is a reporter for CNN Investigates and is based in the Los Angeles bureau, Blake Ellis is a Senior Writer for CNN Investigates, Daniel A. Medina award-winning investigative journalist and contributing investigative reporter at The Intercept, Isabelle Chapman is a producer for CNN Investigates, Bob Ortega is a senior writer for CNN Investigates, 3-16-2022, accessed on 6-24-2022, CNN, “US has ‘significant’ cyber vulnerabilities, but a sweeping Russian cyberattack is unlikely”, <https://www.cnn.com/2022/03/16/politics/russia-us-cyberattack-infrastructure-invs/index.html>, HBisevac)

But now, even as the Russian army drops bombs and mortar shells on civilians in hospitals and neighborhoods and its invasion of Ukraine nears its fourth week, **no known nightmare cyber scenario** — a widespread power outage, a poisoned water system, a crippled supply chain – has come to pass in Ukraine, the US or elsewhere. Ukraine detains 'hacker' accused of aiding Russian troops amid broader struggle to secure communications To be sure, a ripple of smaller cyberattacks ricocheted through the websites of Ukrainian banks and government agencies just before the invasion, and larger attacks may still be in store for the besieged country of 43 million people. But the general consensus among the nearly 20 experts who spoke with CNN for this story is that while Russia is well positioned to launch catastrophic cyberattacks on the US, it is **not likely** to do so. “We do need to consider this possibility as a **low probability** but high-impact scenario,” said Paul Prudhomme, the head of threat intelligence advisory at the cybersecurity firm IntSights. The prospects for a grand-scale cyberattack in America are **low**, experts say. For one, Putin **understands** that his country’s cyber capabilities, though formidable, are **outmatched** by those of the United States, which is generally thought to be the most sophisticated player in the domain. The federal Cybersecurity and Infrastructure Security Agency told CNN it hasn’t yet received any credible cyber threats resulting from the conflict in Ukraine, but it emphasized that the energy sector has been bolstering its defenses in recent years and is on high alert as it urgently prepares for any attempted breach. Experts say Russia’s ability to conduct an impactful cyberattack in the US shouldn’t be underestimated. “If we look at just what they’ve been able to do, there is only, according to public knowledge, one country out there that has any experience taking down electric systems – that’s Russia,” said Robert M. Lee, a cybersecurity expert who investigated the 2015 attack in Ukraine. Testing the waters Cyberattacks against the US by Russia are more than merely possible – they’ve been happening for years on a low-grade scale. The country has been testing the waters in the US, laying the groundwork, experts say, for a much more extensive cyber campaign. For instance, in 2018, the Department of Homeland Security revealed that a group of state-sponsored hackers from Russia had compromised the networks of multiple US electric utilities the year prior and allowed intruders to gather detailed information on the control systems that US electric utilities use to power American communities. That same year, the Department of Justice announced the indictments of 12 Russian intelligence officers for carrying out large-scale cyber operations against the Democratic Party in advance of the 2016 presidential election. Then, in late 2020, came the most advanced cyber-op yet: About 100 organizations around the world – including multiple US government agencies – were revealed to have been breached by Russian hackers who compromised the software provider SolarWinds and exploited their access to monitor internal operations and withdraw data. Putin has been systematically testing vulnerabilities in Europe and the US for the past four years, and is in a position to cause all sorts of economy-crushing problems, experts say. “They know how to weaponize these things – they’ve done it,” said Melissa Hathaway, who led cybersecurity initiatives in the presidential administrations of George W. Bush and Barack Obama. “If I need to cause a national crisis in another country, they know how to do this, they’ve systematically been testing the system.” Prudhomme said a stealthy Russian hacking group called Energetic Bear – which has been tied to Moscow’s Federal Security Service, or FSB – is the most likely Russian third-party, state-sponsored actor to execute any high-level attack. The group, which industry analysts refer to by several aliases, including “Dragonfly” and “Berserk Bear,” has carried out a number of successful hacks in recent years. In 2017, it targeted a nuclear power plant in Kansas in what cybersecurity experts refer to as a “watering hole”-type attack – a practice where hackers place malicious links on websites frequently visited by employees. “The group has a history of gaining access and maintaining access to US and European utility companies, but they don’t do anything with it,” Prudhomme said. “They want to have that access ready at a moment’s notice so, if and when they get the order on demand, they can flip the switch.” In 2020, another state-sponsored Russian group identified by analysts as Cozy Bear, believed to be within Russia’s Foreign Intelligence Service, or SVR, likely orchestrated the SolarWinds hack. US officials said the group used SolarWinds software to breach internal email systems at the US Treasury and Commerce departments, among other key agencies, in what was one of the largest-ever cyber attacks. But it’s a two-way street. Experts say that while it’s true Russians are lurking in the software of various structural areas, Americans are also lurking in theirs. It’s the “cyber equivalent of **m**utually **a**ssured **d**estruction,” said Karen Walsh, CEO of a cybersecurity firm called Allegro Solutions, using a term that historically described a philosophy of deterrence during the nuclear standoff of the Cold War. And the Americans, experts say, are currently the more capable threat. While Russian cyberattacks tend to attract headlines, experts told CNN, the most sophisticated hacks are often carried out in a more professionalized manner by countries such as the US and Israel, which are good at hiding their tracks. One secret operation that spilled into public view in 2010 was known as Stuxnet, in which the US and Israel are widely believed to have jointly sabotaged a nuclear facility in Iran with a computer virus that temporarily hampered the country’s nuclear program. Putin, experts say, understands the extent of this sophistication and is likely **loath** to **poke the bear**.

### 1NC---ASATs---Sat Attack Defense

**No retal or escalation from satellite attacks**

Dr. Eric J. **Zarybnisky 18**, MA in National Security Studies from the Naval War College, PhD in Operations Research from the MIT Sloan School of Management, Lt Col, USAF, “Celestial Deterrence: Deterring Aggression in the Global Commons of Space”, 3/28/2018, https://apps.dtic.mil/dtic/tr/fulltext/u2/1062004.pdf

PREVENTING AGGRESSION IN SPACE

While deterrence and the Cold War are strongly linked in the public’s mind through the nuclear standoff between the United States and the Soviet Union, the fundamentals of deterrence date back millennia and deterrence remains relevant. Thucydides alludes to the concept of deterrence in his telling of the Peloponnesian War when he describes rivals seeking advantages, such as recruiting allies, to dissuade an adversary from starting or expanding a conflict.6F6 Aggression in space was successfully avoided during the Cold War because both sides viewed an attack on military **sat**ellite**s** as highly escalatory, and such an action would likely result in general nuclear war.7F7 In today’s **more nuanced** world, attacking satellites, including military **sat**ellite**s**, does **not** necessarily result in nuclear war. For instance, foreign countries have used high-powered lasers against American intelligence-gathering **sat**ellite**s**8F8 and the **U**nited **S**tates has been **reluctant to respond, let alone retaliate** with **nuc**lear weapon**s**. This **shift in policy** is a result of the broader use of gray zone **op**eration**s**, to which countries struggle to respond while **limiting escalation**. Beginning with the fundamentals of deterrence illuminates how it applies to prevention of aggression in space.

### 2NC---ASATs---Sat Attack Defense

#### No one’s going to war over a downed satellite

Bowen 18 [Bleddyn Bowen, Lecturer in International Relations at the University of Leicester. The Art of Space Deterrence. February 20, 2018. https://www.europeanleadershipnetwork.org/commentary/the-art-of-space-deterrence/]

Space is often an afterthought or a miscellaneous ancillary in the grand strategic views of top-level decision-makers. A president may not care that one satellite may be lost or go dark; it may cause panic and Twitter-based hysteria for the space community, of course. But the terrestrial context and consequences, as well as the political stakes and symbolism of any exchange of hostilities in space matters more. The political and media dimension can magnify or minimise the perceived consequences of losing specific satellites out of all proportion to their actual strategic effect.

#### Space systems are distributed and resilient---the U.S. knows that and won’t jump straight to the nuclear rung of the escalation ladder

Zack Cooper 18, Senior Fellow for Asian Security at the Center for Strategic and International Studies, and Thomas G. Roberts, Research Assistant and Program Coordinator for the Aerospace Security Project at CSIS, “DETERRENCE IN THE LAST SANCTUARY”, War on the Rocks, 1/2/2018, https://warontherocks.com/2018/01/deterrence-last-sanctuary/

Until recently, resilience in space was largely an afterthought. It was assumed that a conflict in space would likely lead to or precede a major nuclear exchange. Therefore, the focus was on cost-effective architectures that maximized satellite capabilities, often at the cost of resilience. Recently, however, some have hoped that new architectures could enhance resilience and prevent critical military operations from being significantly impeded in an attack. Although resilience can be expensive, American investments in smaller satellites and more distributed space architectures could minimize adversary incentives to carry out first strikes in space.

In the late 20th century, minor escalations against space systems were treated as major events, since they typically threatened the superpowers’ nuclear architectures. Today, the proliferation of counter-space capabilities and the wide array of possible types of attacks means that most attacks against U.S. space systems are unlikely to warrant a nuclear response. It is critical that policymakers understand the likely break points in any conflict involving space systems. Strategists should explore whether the characteristics of different types of attacks against space systems create different thresholds, paying particular attention to attribution, reversibility, the defender’s awareness of an attack, the attacker’s ability to assess an attack’s effectiveness, and the risks of collateral damage (e.g., orbital debris). Competitors may attempt to use non-kinetic weapons and reversible actions to stay below the threshold that would trigger a strong U.S. response. The 2017 National Security Strategy warns:

Any harmful interference with or an attack upon critical components of our space architecture that directly affects this vital U.S. interest will be met with a deliberate response at a time, place, manner, and domain of our choosing.

In order to fulfill this promise, the United States will want to ensure that it has capabilities to respond both above and below various thresholds to ensure a full-spectrum of deterrence options for the full range of potential actors.

#### Empirics prove---sats have been attacked dozens of times without retal because the U.S. is loss tolerant

Jonathan Mazur 12, Analyst at Science Applications International Corporation (SAIC), “Past U.S. Actions: A Source for Foreign Perceptions of U.S. Redlines in Space”, Space & Defense, Volume Six, Number 1, Fall 2012, p. 26-27 [language modified]

U.S. REACTIONS TO FOREIGN DISRUPTION OF U.S. CAPABILITIES

In the 1970s, it was suspected that a U.S. maritime communications satellite was turned off by the Soviets when it was outside of the range of U.S. tracking stations.25 There does not appear to be any documented U.S. reaction, and I suspect there was none. In the mid-1990s, satellite hackers in Brazil began hijacking U.S. military communication satellite signals to broadcast their own information, though it took until 2009 for Brazil to crack down on the illegal activity with the support of the DoD.26 In 1998, a U.S.-German satellite known as ROSAT was rendered useless after it turned suddenly toward the sun. NASA investigators later determined the accident was possibly linked to a cyber-intrusion by Russia. The fallout? Though there was an ongoing criminal investigation as of 2008; NASA security officials have seemed determined to publicly minimize the seriousness of the threat.27 In 2003, a signal originating from Cuba—later determined to be coming from Iranian embassy property—was jamming a U.S. communications satellite that was transmitting Voice of America programming over Iran, which was publicly referred to as an “act of war” by a U.S. official. 28 Press reporting indicates the U.S. administration was [deadlocked] ~~“paralyzed”~~ about how to cope with the jamming that continued for at least a month, even after U.S. diplomatic protests to Cuba.29 In 2005, U.S. diplomats protested to the Libyan government after two international satellites were illegally jammed disrupting American diplomatic, military, and FBI communications.30 In 2006, press reporting indicates that China hit a U.S. spy satellite with a ground-based laser. This action was acknowledged by the then director of the NRO, though the DoD remained tight lipped about the incident.31

“We’re at a point where the technology’s out there, and the capability for people to do things to our satellites is there. I’m focused on it beyond any single event.”

– Air Force Space Command Commander, General Chilton, 200632

In 2009, a U.S. commercial Iridium communications satellite—extensively used by the DoD—was accidently destroyed by a collision with a dead Russian satellite.33 The U.S. company, Iridium, was able to minimize any loss of service by implementing a network solution within a few days.34 As of early 2011, no legal action had been taken by the company either because it is not clear who was at fault or because it might be politically problematic for the United States, which is trying to enter into bi-lateral transparency and confidence-building measures (TCBM) with Russia regarding space activities.35 Since August of 2010, North Korea has been intermittently using GPS jamming equipment, which reportedly has been interfering with U.S. and South Korean military operations and civilian use south of the North Korean border.36 Reportedly, only South Korea and the United Nations International Telecommunications Union—at the request of South Korea—have issued letters to Pyongyang demanding the cessation of disruptive communications signals in South Korea.37

It appears that the only time the U.S. military has responded with force to a disruption in U.S. space capabilities was in 2003, a few days after the start of the Iraq war.38 According to U.S. officials, Iraq was using multiple GPS jammers—which supposedly did not affect military GPS functionality. However, the U.S. military bombed the jammers anyway after a diplomatic complaint to Russia.39 The use of military force against the GPS jamming threat was possibly because the United States was already intervening in Iraq, and the bombing probably would not have occurred if the United States was not at war.

A foreign actor researching U.S. investments in space and observing that (a) failed U.S. satellites appeared not to be reconstituted immediately, (b) U.S. public reaction to the losses was minimal, and (c) U.S. reactions to foreign disruptions were inconsistent could come to the judgment that *there appears to be some redundancy in capability in the U.S. space architecture and/or a tolerance of loss within the U.S. Government*. The President is still making his phone calls, missiles are still finding their targets, and satellites are still taking pictures of North Korea’s nefarious efforts.40

### 1NC---ASATs---Space Conflict/Attack Defense

#### No space conflict---mutual uncertainty.

Bruce MacDonald et al., 18 (Bruce MacDonald is an Adjunct Professor at Johns Hopkins University SAIS, Dean Cheng is an Appointed Research Fellow on Chinese military and security issues at the Heritage Foundation, Karl Mueller is a senior political scientist at the RAND Corporation, Victoria Samson is the Washington Office Director for Secure World Foundation, 6-27-2018, accessed on 6-24-2022, John Hopkins Foreign Policy Institute, “Crisis Stability in Space: China and Other Challenges”, <https://www.fpi.sais-jhu.edu/single-post/2018/06/27/crisis-stability-in-space-china-and-other-challenges-study-in-policy-launch>, HBisevac)

In any crisis that threatens to escalate into major power conflict, political and military leaders will face **uncertainty** about the **effectiveness** of their plans and decisions. This uncertainty will be **compounded** when potential conflict extends to the **space** and cyber **domains**, where **weapon effectiveness** is largely untested and **uncertain**, infrastructure **interdependencies** are **unclear**, and damaging an **adversary** could also **harm oneself** or one’s allies. Unless the stakes become very high, no country will likely want to gamble its well-being in a “**single cosmic throw of the dice**,” in Harold Brown’s memorable phrase. 96 The novelty of space and cyber warfare, coupled with **risk aversion** and **worst-case assessments**, could lead space adversaries into a situation of what can be called “**hysteresis**,” where each **adversary** is **restrained** by its own **uncertainty** of success. This is conceptually shown in Figures 1 and 2 for offensive counter-space capabilities, though it applies more generally. 97 These graphs portray the hypothetical differences between perceived and actual performance capabilities of offensive counter-space weapons, on a scale from zero to one hundred percent effectiveness. Where uncertainty and risk aversion are absent for two adversaries, no difference would exist between the likely performance of their offensive counter-space assets and their confidence in the performance of those weapons: a simple, straight-line correlation would exist, as in Figure 1. The more interesting, and more realistic, case is notionally presented in Figure 2, which assumes for simplicity that the offensive capabilities of each adversary are **comparable**. In stark contrast to the case of Figure 1, **uncertainty** and **risk aversion** are present and become important factors. Given the high stakes involved in a possible large-scale attack against adversary space assets, a **cautious adversary** is more likely to be **conservative** in estimating the effectiveness of its offensive capabilities, while **more generously** assessing the **capabilities** of its **adversary**. Thus, if **both side’s** weapons were **50% effective** and each side had a similar level of risk aversion, each may conservatively assess its **own capabilities** to be **30% effective** and its **adversary’s weapons** to be **70% effective**. Likewise, if each side’s weapons were 25% effective in reality, each would estimate its own capabilities to be less than 25% effective and its adversary’s to be more than 25% effective, and so on. In Figure 2, this difference appears, in oversimplified fashion, as a gap that represents the realistic worry that a country’s own weapons will under-perform while its adversary’s weapons will over-perform in terms of effectiveness. If both countries face comparable uncertainty and exhibit comparable risk aversion, each may be **deterred** from initiating an attack by its **unwillingness** to **accept** the **necessary risks**. This gap could represent an “island of stability,” as shown in Figure 2. In essence, given the **enormous stakes** involved in a major strike against the adversary’s **space assets**, a potential attacker will **likely demonstrate** some **risk aversion**, possessing less confidence in an attack’s effectiveness. It is uncertain how robust this hysteresis may prove to be, but the phenomenon may provide at least some stabilizing influence in a crisis. In the nuclear domain, the immediate, direct consequences of military use, including blast, fire, and direct radiation effects, were appreciated at the outset. Nonetheless, significant uncertainty and under-appreciation persisted with regard to the collateral, indirect, and climatological effects of using such weapons on a large scale. In contrast, the immediate, direct effects of major space conflict are **not well understood**, and potential indirect and interdependent effects are even less understood. Indirect effects of **large-scale space** and cyber **warfare** would be **virtually impossible** to confidently **calculate**, as the infrastructures such warfare would affect are constantly changing in design and technology. Added to this is a likely anxiety that if an attack were **less successful** than planned, a **highly aggrieved** and **powerful adversary** could **retaliate** in unanticipated ways, possibly with highly **destructive consequences**. As a result, two adversaries facing potential conflict may **lack confidence** both in the **potential effectiveness** of their own attacks and in the ineffectiveness of any **subsequent retaliation**. Such mutual uncertainty would ultimately be **stabilizing**, though probably not particularly robust. This is reflected in Figure 2, where each side shows more caution than the technical effectiveness of its systems may suggest. Each curve notionally represents one state’s confidence in its offensive counter-space effectiveness relative to their actual effectiveness. Until true space asset resilience becomes a trusted feature of space architectures, deterrence by risk aversion, and cross-domain deterrence, may be the only means for deterrence to function in space.

### 2NC---ASATs---Space Conflict/Attack Defense

#### Deterrence and interdependence check

Kyle L. Evanoff 19, Research Associate for International Institutions and Global Governance at the Council on Foreign Relations, “Big Bangs, Red Herrings, and the Dilemmas of Space Security”, Council on Foreign Relations, 6/27/2019, https://www.cfr.org/blog/big-bangs-red-herrings-and-dilemmas-space-security

Analysts pointed to Mission Shakti as a vivid example of growing contestation in the outer space domain. Traditional U.S. dominance in space has eroded as a litany of foreign actors (collaborator and competitor alike) have increased their spacefaring prowess, including through the development and use of ASAT weapons and dual-use uncrewed orbiters capable of space rendezvous and proximity operations [PDF]. Pundits fear that such space technologies could alter the calculus of deterrence to inauspicious effect or, worse, become instruments in an adversary’s enactment of a “space Pearl Harbor.” These fears are valid in some senses, overblown and misleading in others. Developments in space pose significant challenges for strategic stability. Obsessive concern with the remote contingency of kinetic warfare in orbit, however, detracts from efforts to address more pressing space security issues and makes catastrophic outcomes more, not less, probable.

Missiles and Lasers and Viruses, Oh My

Recent years have witnessed burgeoning democratization in the outer space domain as plummeting costs—both for manufacturing satellites and placing them in orbit—and proliferating technologies have enabled new spacefaring actors to deploy assets in Earth orbit. The number of active satellites has ballooned to more than two thousand, and their integration into military operations and civil life has deepened in tandem. Recognition of the indispensability of these orbital assets to numerous areas of strategic competition, and defense planners’ emphasis on offensive capabilities as a deterrence measure, has led states to invest large sums in the development of ASAT weapons of various stripes.

In their April Space Threat Assessment 2019 [PDF] report, Todd Harrison, Kaitlyn Johnson, and Thomas G. Roberts of the Center for Strategic and International Studies outline four categories of counterspace operations: kinetic physical attacks, non-kinetic physical attacks, electronic attacks, and cyberattacks. This litany of potential threats, which vary in their severity, reversibility, ease of attribution, and other aspects, makes U.S. policymakers uneasy. After over half a century of spacefaring pre-eminence, the United States has come to depend on the remote-sensing, telecommunications, and positioning, navigation, and timing capabilities that satellites provide. The resounding defeat of the Iraqi military by American and coalition forces during the Gulf War of the early 1990s underscored the substantial battlefield advantages that orbital capabilities confer, and numerous subsequent conflicts have affirmed the U.S. military’s tactical and strategic reliance on space assets. Proliferating counterspace systems heighten the potential for adversaries to disrupt American command, control, and communications networks, as well as surveillance and reconnaissance operations. In attacking these critical space systems, U.S. adversaries could compromise large segments of the national defense enterprise.

Indeed, an insecure orbital environment poses significant challenges for broader strategic stability. Actors in possession of counterspace capabilities can threaten or attack vital elements of ballistic missile launch detection architectures and other systems integral to national and international security, which opens new avenues for intentional, inadvertent, or accidental dispute or conflict escalation. In this sense, novel satellite vulnerabilities add layers of technical and psychological complexity to already labyrinthine deterrence calculations. The effect compounds in light of the deep integration of satellites into information and communications networks: cyber intrusions into space systems are a tantalizing option for state and nonstate actors, and such operations carry their own elaborate deterrence considerations, not least the difficulty of attribution. The net result is a convoluted deterrence landscape, rife with uncertainty and in constant motion thanks to the rapid clip and often competitive character of technological innovation.

Swords of Many Edges

For staunch deterrence advocates, this uncertainty justifies expanding counterspace arsenals. In their view, preventing a space Pearl Harbor in which a U.S. adversary launches a crippling surprise attack against American orbital assets requires evincing the certainty of a devastating counterattack. One way of accomplishing this is through the unambiguous demonstration of effective counterspace capabilities. The clearer the demonstration, the better. In this sense, ASAT missile tests, which are easy to attribute and spectacular in nature, hold great allure as a means of signaling orbital strike capabilities.

Such tests, however, come with significant drawbacks. The most obvious of these is that they generate large amounts of dangerous space debris, which pose serious hazards to spacecraft. Each new fragment requires monitoring and, in cases of potential collisions, risk assessment and avoidance maneuvers. Debris-generating military operations, in this sense, are a self-defeating proposition. ASAT missile tests also come with nebulous reputational costs, as the corpus of international space law, including the 1967 Outer Space Treaty, emphasizes that uses of space should be peaceful in nature. Likewise, UN Debris Mitigation Guidelines [PDF] affirm the importance of minimizing space junk, a dictum inconsistent with kinetic weapons testing. Western media heaped scorn on India for its violation of the important, if incipient, norm against debris generation, even after the country took pains to destroy a low-altitude satellite in order to minimize the lifespan of the bulk of the fragments.

Another important consideration for would-be ASAT testers lies in the potential for space militarization to ignite or exacerbate international arms races. Although military activities have been a persistent feature of the Space Age, those activities have often furthered peaceful as much as warlike pursuits, as has been the case with many remote-sensing operations and the opening of the U.S. Global Positioning System to civilian use. Militarization is a process rather than a state of affairs, and one that takes various forms at that. Deterrence implications notwithstanding, the development and deployment of counterspace capabilities can drive potential adversaries to develop and deploy similar capabilities, contributing to the erosion of norms of peaceful use.

Some military planners and policymakers’ assertions to the contrary, space is at present less a domain of warfighting than a domain of deep interdependence. The value of combat support functions performed from space, as important as they are to battlefield success, pales in comparison to that of other satellite-facilitated services, which are vital to myriad aspects of contemporary global society. Common space security interests include minimizing debris-generation, coordinating on satellite placement and radio-frequency spectrum use, monitoring terrestrial and space weather and the global environment, ensuring the integrity of global navigation satellite systems, tracking licit and illicit ground, air, and maritime movements, scanning for hazardous comets and asteroids, and conducting scientific observations and experiments. Many of these require states to work together to maximize benefits and minimize risks. Perceptions that one or more countries are attempting in systematic fashion to exert dominance and preclude other actors’ access to the domain and its benefits, then, carry significant dangers. They bend state behavior toward aggression and actual warfighting.

Security in the Heavens and on Earth

National governments, including that of the United States, should be careful not to make active contributions to such perceptions. Although low-level grey zone aggression has become commonplace for space-linked systems due to the relative ease and reversibility of many cyber and electronic attacks, space remains free of kinetic combat at present, as a recent Secure World Foundation report [PDF] emphasizes. Rather than responding to limited attacks by expanding counterspace arsenals, which carries the risk of contributing to arms race dynamics, U.S. and allied policymakers should accept some amount of limited aggression as more or less inevitable. They should place more emphasis on diplomacy—not weaponry—as a tool in mitigating these sorts of attacks. The United States should work with other spacefaring powers to reach consensus on non-binding rules of the road for space, using the International Code of Conduct for Outer Space Activities [PDF] that the European Union proposed in 2008 as a rough starting point. While new international law could be a greater boon still, formal UN discussions on the Prevention of an Arms Race in Outer Space have yielded little progress since the mid-1980s. A joint Chinese-Russian proposal for a Treaty on the Prevention of the Placement of Weapons in Outer Space, for instance, has significant shortcomings and has drawn open condemnation from the United States. Such paralysis, in tandem with the Trump administration’s and U.S. Senate Republicans’ disdain of multilateral treaties, makes a formal agreement a farfetched proposition for now.

More important, U.S. policymakers should avoid making decisions on the basis of a possible, though highly improbable, space Pearl Harbor. They should recognize that latent counterspace capabilities—as exemplified in 2008’s Operation Burnt Frost, which saw the United States repurpose a ballistic missile interceptor to destroy a satellite—are more than sufficient to deter adversaries from launching a major surprise attack in almost all scenarios, especially in light of the aforementioned deep interdependence in the space domain. Adding to the deterrence effect are uncertain offensive cyber capabilities. The United States continues to launch incursions into geopolitical competitors’ critical systems, such as the Russian power grid, and has demonstrated a willingness to employ cyberattacks in the wake of offline incidents, as it did after Iran shot down a U.S. drone last week. Unlike in the nuclear arena, where anything short of the prospect of nuclear retaliation holds limited dissuasive power, space deterrence can stem from military capabilities in various domains. For this reason, an attack on a U.S. satellite could elicit any number of responses. The potential for cross-domain retaliation, combined with the high strategic value of space assets, means that any adversary risks extreme escalation in launching a major assault on American space architectures. Again, well-conceived diplomatic efforts are useful in averting such scenarios altogether.

**No space war and terrestrial conflict turns it**

Luke Penn-**Hall 15**, Analyst at The Cipher Brief, M.A. from the Johns Hopkins School for Advanced International Studies, B.A. in International Relations and Religious Studies from Claremont McKenna College, “5 Reasons “Space War” Isn’t As Scary As It Sounds”, The Cipher Brief, 8/18/2015, https://www.thecipherbrief.com/article/5-reasons-%E2%80%9Cspace-war%E2%80%9D-isn%E2%80%99t-scary-it-sounds

The U.S. depends heavily on military and commercial satellites. If a less satellite-dependent opponent launched an anti-satellite (ASAT) attack, it would have far greater impact on the U.S. than the attacker. However, it’s not as simple as that – for the following reasons:

1. An ASAT attack would likely be **part of a larger, terrestrial attack**. An attack on space assets would be no different than an attack on territory or other assets on earth. This means that no space war would stay limited to space. An ASAT campaign would be part of a larger conventional military conflict that would play out on earth.

2. Every country with ASAT capabilities also needs **sat**ellite**s**. While the United States is the most dependent on military satellites, most other countries need satellites to participate in the global economy. All countries that have the technical ability to play in this space – the U.S., Russia, China and India - also have a **vested interest** in preventing the militarization of space and protecting their own satellites. If any of those countries were to attack U.S. satellites, it would likely **hurt them** far more than it would hurt the United States.

3. Destruction of satellites could create a damaging chain reaction. Scientists warn that the violent destruction of satellites could result in an effect called an ablation cascade. High-velocity debris from a destroyed satellite could crash into other satellites and create more high-velocity debris. If an ablation cascade were to occur, it could render certain orbital levels completely unusable for centuries.

4. Any country that threatened access to space would threaten the global economy. Even if a full-blown ablation cascade didn’t occur, an ASAT campaign would cause debris, making operating in space more hazardous. The global economy relies on satellites and any disruption of operations would be met with worldwide disapproval and severe economic ramifications.

5. International **Prohibits** the Use of ASAT Weapons. Several international treaties expressly **prohibit signatory nations** from attacking other countries’ space assets. It is generally accepted that space should be treated as a global common area, rather than a military domain.

While it remains necessary for military planners to create contingency plans for a, space war it is a **highly unlikely** scenario. All involved parties are **incentivized against** attacking. However, if a space war did occur, it would be **part of** a larger conflict **on Earth**. Those concerned about the potential for war in space should be more concerned about the potential for war, period.

### 1NC---ASATs---Taiwan Invasion Defense

#### No Taiwan war---China has pledged to unify since Mao but has zero incentive to actually go to war.

Bush et al. 21, Richard Bush, former Senior Fellow and Director of the Center for East Asia Policy Studies at the Brookings Institution; Bonnie Glaser, Director of the China Power Project at the Center for Strategic and International Studies; Ryan Haas, served on the National Security Council in the Obama administration, Senior Fellow at the Brookings Institution, “Opinion: Don't Help China By Hyping Risk Of War Over Taiwan,” NPR, 04-08-2021, https://www.npr.org/2021/04/08/984524521/opinion-dont-help-china-by-hyping-risk-of-war-over-taiwan

A growing chorus of officials and experts in the United States has been raising alarm about the risk of a Chinese attack against Taiwan. Adm. Philip S. Davidson, the United States Indo-Pacific commander, recently handicapped the threat of a Chinese assault on Taiwan as "manifest during this decade, in fact, in the next six years." China is preparing to invade and unify Taiwan by force, the thinking goes, as soon as it gains the capabilities to do so. Such doomsday predictions deserve interrogation.

China's actions no doubt have earned scrutiny. In recent years, Beijing has grown impatiently aggressive in pursuit of its ambitions. China has drawn blood along the contested Indian border, threatened Vietnam, expanded its military presence in the South China Sea, increased the tempo of its operations near the Senkaku Islands and trampled Hong Kong's autonomy — to say nothing of the atrocities it is perpetrating against its own citizens in Xinjiang and elsewhere.

Beijing also is investing considerably in military capabilities that could be employed in a Taiwan contingency. China has gone on a naval shipbuilding surge in recent years, surpassing the U.S. Navy by a count of hulls. Robert S. Ross of Boston College estimates that the Chinese Navy already has more than 300 ships, while the U.S. Navy has around 280.

China is marshaling its full range of capabilities to intensify pressure on Taiwan below the threshold of conflict. People's Liberation Army forces now operate all around Taiwan. They also have been conducting highly publicized amphibious assault exercises and air penetrations of Taiwan's air defense identification zone at the highest frequency in nearly 25 years.

Contributing to Beijing's unfriendly treatment of Taiwan was its perception that the Trump administration showed stronger support for the island's government, thus reducing any incentive that Taipei had to submit to its demands. Trump officials took initiatives mainly in the diplomatic and security realms, and they did buoy Taiwan's confidence. The Biden administration has shown broad continuity in support for Taiwan during its first months.

As troubling as the trend-lines of Chinese behavior are, it would be a mistake to infer that they represent a prelude to an unalterable catastrophe. China's top priority now and in the foreseeable future is to deter Taiwan independence rather than compel unification. Beijing remains confident in its capacity to achieve this near-term objective, even as it sets the groundwork for its long-term goal of unification. Indeed, based on polling on attitudes regarding defense, we believe the people of Taiwan already are sober to the risks of pursuing independence.

China's leaders also have employed sharp rhetoric, though some of it has been exaggerated. Too much is made of President Xi Jinping's declaration not to pass down cross-strait divisions to future generations. Every Chinese leader since Mao Zedong has projected determination to unify Taiwan with the mainland. Xi is no different. And Xi, now 67, will not likely be around to see if Taiwan is unified with the mainland by the putative deadline, the 100-year anniversary of the founding of the People's Republic of China in 2049.

While it is true that some in China have concluded that time is no longer on China's side and Beijing should use force to compel unification, Xi has resisted such pressure. In the latest five-year plan, launched this year, Beijing reaffirmed the policy guideline of pursuing "peaceful development of cross-strait relations," continuing a line tracing back to the era of Hu Jintao, China's president from 2003 to 2013.

Beijing has its own incentives to avoid war. Foremost among them is that any attempt to take Taiwan by force would very likely invite a military conflict with the United States. Such a conflict would be difficult to limit from escalating or spreading beyond the Taiwan Strait.

Under such circumstances, Beijing could not be assured of absolute victory, and anything short of quick and absolute unification would risk undermining Chinese Communist Party legitimacy at home. China's use of force against Taiwan also would poison China's image in the region and the world, alert neighboring countries to the threat China poses to stability and lead to diversion of resources and focus from Xi's pressing domestic priorities.

Given the unattractiveness of these options, it is little surprise that China has chosen a different path. In recent years, Beijing has unveiled a broad range of tools to deter Taiwan's independence and gradually weaken the will of the people of Taiwan to resist integration with the mainland.

China has targeted Taiwan economically, sought to induce a brain drain of Taiwan's top engineers to the mainland, isolated Taiwan on the world stage, fomented social divisions inside Taiwan, launched cyberattacks and undertaken displays of military force.

Beijing's goal is to constantly remind Taiwan's people of its growing power, induce pessimism about Taiwan's future, deepen splits within the island's political system and show that outside powers are impotent to counter its flexes.

Its approach is guided by the Chinese aphorism, "Once ripe, the melon will drop from its stem." This strategy may require more time than war, but it would come at less cost and risk to Beijing.

Coercion without violence is not just a threat; it's an everyday reality. China does pose a kinetic threat to Taiwan, and Taiwan and the United States must strengthen their capacity to deter war. But the proximate threat is not just military, it's also psychological.

Hyping the threat that China poses to Taiwan does Beijing's work for it. Taiwan's people need reasons for confidence in their own future, not just reminders of their vulnerabilities.

### 1NC---SSA---Space Collisions Defense

**No risk of accidents – tech solves AND space isn’t crowded.**

**Fernholz ’19** [Tim, "SpaceX’s new satellites will dodge collisions autonomously (and they’d better)," May 24, https://qz.com/1627570/how-autonomous-are-spacexs-starlink-satellites]

“Within a year and a half, maybe two years, if things go well, SpaceX will probably have more satellites in orbit than all other satellites combined,” Elon Musk said last week. This is an exaggeration. There are almost 2,000 operational satellites in space right now. But Thursday night’s launch of 60 satellites for a new internet network called Starlink is the first step towards that goal. Today, Musk’s space company said it expects to launch six more times in 2019, with the goal of operating 720 satellites by the end of the 2020, and eventually more than 4,000. The Federal Communications Commission—the lead regulator for American satellites—approved these satellite, among 13,000 new satellites okayed in the last year. That huge number has many in the space community nervous about the potential for collisions with other satellites or with space debris. Neither the United States nor the world has a reliable system for managing traffic in space, and policymakers are struggling to keep up with the private sector’s growing ability to hurl computers into the cosmos at faster and faster rates. Musk said the satellites his company launches will avoid potential collisions on their own. And Mark Juncosa, the SpaceX executive in charge of developing the Starlink satellites, downplayed concerns when answering press inquiries on the matter last week. “It might be worth mentioning for people that are not in the space industry … space is really big,” he said. It was experts focused on pinning down what’s going on in orbit who questioned whether the autonomous systems would have sufficient data to safely maneuver. Musk’s electric cars at Tesla often face similar questions. However advanced their AI, what’s more important is how well the car can see. The ultimate source for space situational awareness is the US Air Force’s Combined Space Operations Center, or CSpOC, which tracks orbital objects 10 centimeters in diameter or larger with a worldwide radar network. Most satellite companies, especially those with large fleets, automate the communications and “station keeping” maneuvers. But when they receive a warning from CSpOC that there is a risk of collision with another spacecraft or with space debris, their team consults with the Air Force to make a decision about how to move. Planet, which operates more than 150 spacecraft, automates its communications with CSpOC and has software that calculates the probability of potential conjunctions when they receive a warning. But, when the probability of conjunction reaches about 1 in 10,000, their flight operations team steps in to plan a maneuver to keep their satellites out of trouble. SpaceX says there will be no human in the loop when it comes to its satellites. When notified of a potential conjunction with another object in space, their software will decide whether and how to maneuver, and communicate that information back to CSpOC. It’s not clear what their threshold will be for taking action, or how much warning they will give to the US Air Force. CSpOC did not respond to questions about this communications system. Satellite experts are happy to see efforts at automation, because conjunction reports are only going to increase as more satellites fly. But they worry about an automated system responding to imperfect data, and emphasize the need for the widest possible transparency. Though orbital mechanics are extremely predictable, space sensing is imperfect and the margin of error around where exactly a satellite can be is quite large. Many spacecraft operators join the Space Data Association, a trade association for exchanging space traffic data, and others partner with new space surveillance companies like LeoLabs to obtain more data about what’s happening in orbit. “Because we look at many hundreds of satellites every single day, we find that there are issues with the data,” Dr. T.S. Kelso, a former Air Force officer who works for the Space Data Association, told Quartz. His operation generates about 2,000 conjunction reports every four days. “We can go from something that looks very serious one day to all of the sudden there is nothing in the data. … if you are maneuvering because it is a 1 in 10,000 chance, if you had done nothing, you still had a pretty good chance nothing was going to happen.” SpaceX isn’t responsible for the lack of a real space traffic management system, but as a first mover among companies preparing ambitious satellite networks that far outstrip anything that came before, it is likely to set the tone for how operators and regulators interact. The company chose to fly the satellites at a low enough altitude that if they fail, they will safely burn up in the atmosphere within a year, rather than remaining space junk. “The space junk thing, we don’t want to trivialize it or not take it seriously,” Musk said. “[But] it’s not crowded up there. It’s extremely sparse. If your goal was to hit something, it wouldn’t be easy.”

### 1NC---SSA---Space Debris Defense

#### No debris cascades, but even a worst case is confined to low LEO with no impact

Daniel Von Fange 17, Web Application Engineer, Founder and Owner of LeanCoder, Full Stack, Polyglot Web Developer, “Kessler Syndrome is Over Hyped”, 5/21/2017, http://braino.org/essays/kessler\_syndrome\_is\_over\_hyped/

Kessler Syndrome is overhyped. A chorus of online commenters great any news of upcoming low earth orbit satellites with worry that humanity will to lose access to space. I now think they are wrong.

What is Kessler Syndrome?

Here’s the popular view on Kessler Syndrome. Every once in a while, a piece of junk in space hits a satellite. This single impact destroys the satellite, and breaks off several thousand additional pieces. These new pieces now fly around space looking for other satellites to hit, and so exponentially multiply themselves over time, like a nuclear reaction, until a sphere of man-made debris surrounds the earth, and humanity no longer has access to space nor the benefits of satellites.

It is a dark picture.

Is Kessler Syndrome likely to happen?

I had to stop everything and spend an afternoon doing back-of-the-napkin math to know how big the threat is. To estimate, we need to know where the stuff in space is, how much mass is there, and how long it would take to deorbit.

The orbital area around earth can be broken down into four regions.

Low LEO - Up to about 400km. Things that orbit here burn up in the earth’s atmosphere quickly - between a few months to two years. The space station operates at the high end of this range. It loses about a kilometer of altitude a month and if not pushed higher every few months, would soon burn up. For all practical purposes, Low LEO doesn’t matter for Kessler Syndrome. If Low LEO was ever full of space junk, we’d just wait a year and a half, and the problem would be over.

High LEO - 400km to 2000km. This where most heavy satellites and most space junk orbits. The air is thin enough here that satellites only go down slowly, and they have a much farther distance to fall. It can take 50 years for stuff here to get down. This is where Kessler Syndrome could be an issue.

Mid Orbit - GPS satellites and other navigation satellites travel here in lonely, long lives. The volume of space is so huge, and the number of satellites so few, that we don’t need to worry about Kessler here.

GEO - If you put a satellite far enough out from earth, the speed that the satellite travels around the earth will match the speed of the surface of the earth rotating under it. From the ground, the satellite will appear to hang motionless. Usually the geostationary orbit is used by big weather satellites and big TV broadcasting satellites. (This apparent motionlessness is why satellite TV dishes can be mounted pointing in a fixed direction. You can find approximate south just by looking around at the dishes in your northern hemisphere neighborhood.) For Kessler purposes, GEO orbit is roughly a ring 384,400 km around. However, all the satellites here are moving the same direction at the same speed - debris doesn’t get free velocity from the speed of the satellites. Also, it’s quite expensive to get a satellite here, and so there aren’t many, only about one satellite per 1000km of the ring. Kessler is not a problem here.

How bad could Kessler Syndrome in High LEO be?

Let’s imagine a worst case scenario.

An evil alien intelligence chops up everything in High LEO, turning it into 1cm cubes of death orbiting at 1000km, spread as evenly across the surface of this sphere as orbital mechanics would allow. Is humanity cut off from space?

I’m guessing the world has launched about 10,000 tons of satellites total. For guessing purposes, I’ll assume 2,500 tons of satellites and junk currently in High LEO. If satellites are made of aluminum, with a density of 2.70 g/cm3, then that’s 839,985,870 1cm cubes. A sphere for an orbit of 1,000km has a surface area of 682,752,000 square KM. So there would be one cube of junk per .81 square KM. If a rocket traveled through that, its odds of hitting that cube are tiny - less than 1 in 10,000.

So even in the worst case, we don’t lose access to space.

Now though you can travel through the debris, you couldn’t keep a satellite alive for long in this orbit of death. Kessler Syndrome at its worst just prevents us from putting satellites in certain orbits.

In real life, there’s a lot of factors that make Kessler syndrome even less of a problem than our worst case though experiment.

* Debris would be spread over a volume of space, not a single orbital surface, making collisions orders of magnitudes less likely.
* Most impact debris will have a slower orbital velocity than either of its original pieces - this makes it deorbit much sooner.
* Any collision will create large and small objects. Small objects are much more affected by atmospheric drag and deorbit faster, even in a few months from high LEO. Larger objects can be tracked by earth based radar and avoided.
* The planned big new constellations are not in High LEO, but in Low LEO for faster communications with the earth. They aren’t an issue for Kessler.
* Most importantly, all new satellite launches since the 1990’s are required to include a plan to get rid of the satellite at the end of its useful life (usually by deorbiting)

So the realistic worst case is that insurance premiums on satellites go up a bit. Given the current trend toward much smaller, cheaper micro satellites, this wouldn’t even have a huge effect.

I’m removing Kessler Syndrome from my list of things to worry about.

### 2NC---SSA---Space Debris Defense

#### It takes centuries and adaptation solves

Ted Muelhaupt 19, Associate Principal Director of the Systems Analysis and Simulation Subdivision (SASS) and Manager of the Center for Orbital and Reentry Debris Studies at The Aerospace Corporation, M.S., B.S. Aerospace and Aeronautical Engineering & Mechanics, University of Minnesota - Twin Cities, Senior Member of the American Institute of Aeronautics and Astronautics, “How Quickly Would It Take For the Kessler Syndrome To Destroy All The Satellites In LEO? And Could You See This Happening From Earth?”, Quora, 2/28/2019, https://www.quora.com/How-quickly-would-it-take-for-the-Kessler-Syndrome-to-destroy-all-the-satellites-in-LEO-And-could-you-see-this-happening-from-Earth

The dynamics of the Kessler Syndrome are real, and most people studying it agree on the concept: if there is sufficient density of objects and mass, a chain reaction of debris breaking up objects and creating more debris can occur. But the timescale of this process takes decades and centuries. There are many assumptions that go into these models. Though there is still argument about this, many people in the field think that the process is already underway in low earth orbit. But others, including myself, think we can stop it if we take action. This is a slow motion disaster that we can prevent.

But in spite of hype to the contrary, we will never “lose access to space”. Certain missions may become impractical or too expensive, and we may decide that some orbits are too risky for humans. Even that depends on the tolerance for the risk. But robots don’t have mothers, and if we feel it is worthwhile we will take the risk and fly the satellites where we need to.

To the specifics of the question, it will take many decades. It will not destroy all satellites in LEO. You won’t be able to see it from the ground unless you were extraordinarily lucky, and you happened to see a flash from a collision in the instant you were looking, with just the right lighting.

#### Squo tracking, shielding, and removal plans solve

Dr. Brian Koberlein 16, Professor of Physics at the Rochester Institute of Technology and PhD in Astrophysics from the University of Connecticut, “Cascade Effect”, 5-4, https://archive.briankoberlein.com/2016/05/04/cascade-effect/index.html

In the movie Gravity the driving force of the plot is a catastrophic cascade of space debris. An exploding satellite sends high speed debris into the path of other satellites, and the resulting collisions create more space debris until everything from a space shuttle to the International Space Station faces an eminent threat of destruction. Not unexpectedly, the movie portrayal of such a situation is not particularly accurate, but the risk of a debris cascade is very real.

It’s known as the Kessler syndrome, after Donald Kessler, who first imagined the scenario in the 1970s. The problem comes down to the fact that small objects in Earth orbit can stay in orbit for a very long time. If an astronaut drops a bolt, it can stay in orbit for decades or centuries. Because the relative speed of two objects in orbit can be quite large, it doesn’t take a big object to pose a real threat to your spacecraft. On the highway a small pebble can chip your car windshield. In space it can be done by a chip of paint traveling at thousands of kilometers per hour. In the history of the space shuttle missions, there were more than 1,600 debris strikes. Because of such strikes, more than 90 space shuttle windows had to be replaced over the lifetime of shuttle missions.

While that might sound alarming, it’s actually quite manageable. Upgrades and maintenance were quite common on the shuttle missions, and we tend to err on the side of caution when it comes to replacing parts. Modern spacecraft also have ways to mitigate the risk of small impacts, such as Whipple shields made of thin layers of material spaced apart so that objects disintegrate when hitting the shield rather than the spacecraft itself. We also have a tracking system that currently tracks more than 300,000 objects bigger than 1 cm, so we can make sure that most spacecraft avoid these objects.

But the risk of big collisions isn’t negligible. In 2009 the Iridium 33 and Kosmos-2251 satellites collided at high speed, destroying both spacecraft and creating more dangerous debris. It wouldn’t take many collisions like this for the debris numbers to rise dramatically, and more debris means a greater risk of collisions. In Gravity the cascade happens very quickly, triggered by a single event. The reality is not quite so grave. Instead of happening overnight, Kessler syndrome would occur gradually, raising collision risks to the point where certain orbits become logistically impractical. It could occur so gradually that we might not notice it early on, and there are some that argue it’s already underway.

The good news is that we’re aware of the threat. And, as the old saying goes, knowing is half the battle. Already we take steps to limit the amount of debris created. New spacecraft include end of life plans to remove them from orbit, either by sending them into Earths atmosphere to burn up, or sending them to a “graveyard orbit” that poses little risk to other spacecraft. There are also plans on the drawing board to clear orbits of debris, particularly in low-Earth orbit where the risk is greatest. The cascade effect is a real risk, but it’s also one we can likely manage with a bit of ingenuity.

### 1NC---SSA---Space Weather Defense

#### No chance of a short-term solar storm

Miriam Kramer 18, MA in Science Reporting from New York University, Science Editor at Axios, Former Staff Writer at Space.com, BA in Journalism from the University of Tennessee, Knoxville, “Don't Believe The Hype About The Coming Solar Storm”, Mashable, 3/13/2018, https://mashable.com/2018/03/13/solar-storm-hitting-earth/

Perhaps you've heard; a solar storm is on the way.

If much of the news coverage is to be believed, the coming solar storm is "massive" and could "cause power outages" because of "equinox cracks" that have appeared in Earth's magnetic field, leaving us vulnerable.

But that's not the full story.

In fact, at best, it's a serious misunderstanding of the facts, and at worse, it's a purposeful sensationalization of a pretty average solar event.

"This is just garbage, quite frankly," Robert Rutledge, of the National Oceanic and Atmospheric Administration's Space Weather Prediction Center (SWPC), said of the coverage around this solar storm, in an interview. Rutledge went on to say that he's unsure what "equinox cracks" are, and that the SWPC doesn't use that term.

A solar storm is actually expected to impact the Earth from March 14 to March 15, but it certainly isn't massive.

The storm, known as a "G1" geomagnetic storm, is actually the most minor of these types of solar storms, and it likely won't create any of the serious issues mentioned in many news articles published over the course of the past couple days.

The sun is actually pretty quiet at the moment.

According to the SWPC, it's possible that the solar storm — which will occur when charged particles from the sun interacting with Earth's magnetic field — will cause "weak power grid fluctuations" and may have a "minor impact on satellite operations."

That's a far cry from the serious power outages touted by some.

#### No impact to flares or grid collapse

Eric Niiler 19, Adjunct Faculty Member at Johns Hopkins University’s Science Writing Program, Contributor at Wired, “The Grid Might Survive an Electromagnetic Pulse Just Fine”, Wired Magazine, 4/30/2019, https://www.wired.com/story/the-grid-might-survive-an-electromagnetic-pulse-just-fine/

Over the past few years, speculation has risen around whether North Korea or any other nation could detonate a nuclear weapon over the United States that would create an electromagnetic pulse and knock out all electricity for weeks or months. This doomsday hypothesis has been promoted by a former CIA director, a commission set up by Congress, and a book by newsman Ted Koppel. But a sober new engineering study by industry experts finds that key equipment on the grid can be protected from any such EMP. Even if it could happen, the resulting blackouts would affect a few states but wouldn't turn the US into a backdrop for The Walking Dead.

The study, by the Electric Power Research Institute, a utility-funded research organization, finds that existing technology can protect various components of the electric grid to buffer it from the effects of solar flares, lightning strikes, and an EMP from a nuclear blast all at the same time: a three-for-one surge protector. “We have a strong technical basis for what the impacts [of an EMP] might be,” says Randy Horton, EPRI project manager and author of the report being released today. “That is one thing that didn’t exist before.”

Horton says that EPRI technicians worked with experts at the Department of Energy labs at Los Alamos and Sandia to simulate some effects of an EMP on substations and distribution systems. They also did real-world testing of electrical equipment at an EPRI laboratory in Charlotte, North Carolina. The study, which took three years to complete, looks at the effects of three kinds of energy spawned by a nuclear detonation.

The first high-energy wave occurs in just a few nanoseconds and is called an E1. The second wave, called an E2, lasts up to a second and can fry electric systems the way a lightning strike does, unless they are properly grounded. Effects of an E2 wave on the grid are expected to be minimal. The third kind of wave can last for tens of seconds and is similar to what utility operators might expect from a low-frequency, long-duration solar flare or geomagnetic storm. The report says that the combination of an E1 and E3 would cause the most damage over the widest area.

Horton says simulations and testing by EPRI contradicts earlier findings that an EMP would wipe out the US grid. “You could have a regional voltage collapse, but you wouldn’t damage a large number of bulk power transformers immediately,” Horton says. “That was the difference in our finding. There were some studies that said you could damage hundreds of transformers. We just didn’t find it.”

Some members of an EMP commission have argued for the past decade that an attack would destroy the electric grid, and kill 90 percent of the US population through disease or starvation. That panel shut down in 2017 after the Department of Homeland Security did not request more funds from Congress to keep it going.

Apart from the electric power industry, the Pentagon has been conducting its own classified tests about potential effects from such an event on military installations. A group of experts is meeting this week at Maxwell Air Force Base in Montgomery, Alabama, says Air Force lieutenant-general Steven Kwast, who is coordinating the event.

Kwast says the threat is much more real than the public believes. “You don’t need to have a nuclear detonation in space to do this,” he said. “You could have a hot-air balloon rising above a city with a tactical electromagnetic weapon. You could do one over an airfield of F-35s or one Army post so none of the tanks work or over a shipyard so that none of the ships sail. Our enemy is clever and adaptive. They see our soft underbelly is our electricity.”

But other nuclear weapons experts say the technical study by EPRI brings scientific rigor to a field that has been dominated by hype and fearmongering. “When you are doing documented research on physical systems, it is still solid evidence, no matter who paid for it,” says Sharon Burke, a senior adviser at the Foundation for a New America and a former assistant secretary of defense for operational energy in the Obama administration. “This is not someone’s opinion.”

### 1NC---SSA---Kessler Defense

#### Kessler Syndrome false – less debris and existing guidelines solve

Lewis 15 (Hugh, Senior Lecturer in Aerospace Engineering at the University of Southampton, “Space debris, Kessler Syndrome, and the unreasonable expectation of certainty.” Room, <https://room.eu.com/article/Space_debris_Kessler_Syndrome_and_the_unreasonable_expectation_of_certainty>, Accessed 8/10/19, JMoore)

There is now widespread awareness of the space debris problem amongst policymakers, scientists, engineers and the public. Thanks to pivotal work by J.C. Liou and Nicholas Johnson in 2006 we now understand that the continued growth of the debris population is likely in the future even if all launch activity is halted. The reason for this sustained growth, and for the concern of many satellite operators who are forced to act to protect their assets, are collisions that are expected to occur between objects – satellites and rocket stages – already in orbit. In spite of several commentators warning that these collisions are just the start of a collision cascade that will render access to low Earth orbit all but impossible – a process commonly referred to as the ‘Kessler Syndrome’ after the debris scientist Donald Kessler – the reality is not likely to be on the scale of these predictions or the events depicted in the film Gravity. Indeed, results presented by the Inter-Agency Space Debris Coordination Committee (IADC) at the Sixth European Conference on Space Debris show an expected increase in the debris population of only 30% after 200 years with continued launch activity. Collisions are still predicted to occur, but this is far from the catastrophic scenario feared by some. Constraining the population increase to a modest level can be achieved, the IADC suggested, through widespread and good compliance with existing space debris mitigation guidelines, especially those relating to passivation (whereby all sources of stored energy on a satellite are depleted at the end of its mission) and post-mission disposal, such as de-orbiting the satellite or re-orbiting it to a graveyard orbit. Nevertheless, the anticipated growth of the debris population in spite of these robust efforts merits the investigation of additional measures to address the debris threat, according to the IADC.

### 1NC---SSA---Kessler---Environment Defense

#### Environment is resilient

Ronald Bailey 20 (Ronald Bailey is the science correspondent for Reason and the author of the books The End of Doom: Environmental Renewal in the Twenty-first Century (July 2015) and Liberation Biology: The Moral and Scientific Case for the Biotech Revolution (Prometheus, 2005). His work was featured in The Best American Science and Nature Writing 2004, 8/1/20, accessed 10/26/21, “The Global Environmental Apocalypse Has Been Canceled”, <https://reason.com/2020/08/01/the-global-environmental-apocalypse-has-been-canceled/)AGabay>

According to these activists and politicians, humanity is beset on all sides by catastrophes that could kill off **civilization**, and maybe even our species. Are they right? **Absolutely** **not**, answers the longtime environmental activist Michael Shellenberger in an engaging new book, Apocalypse Never: Why Environmental Alarmism Hurts Us All. "Much of what people are being told about the **environment**, including the climate, is **wrong**, and we desperately need to get it right," he writes. "I decided to write Apocalypse Never after getting fed up with the exaggeration, alarmism, and extremism that are the enemy of positive, humanistic, and rational environmentalism." While fully acknowledging that significant global environmental problems exist, Shellenberger argues that they do not **constitute** inexorable **existential threats**. Economic **growth and technological progress**, he says, can **ameliorate** them. Shellenberger's analysis relies on largely **uncontroversial mainstream science**, including reports from the Intergovernmental Panel on Climate Change (IPCC) and the Food and Agriculture Organization. And as a longstanding activist, Shellenberger is in a good position to parse the motives behind the purveyors of doom. Shellenberger's activism is the real deal. To raise a donation to the Rainforest Action Network, he charged his friends $5 to attend his 16th birthday party. At 17 he went to Nicaragua to experience the Sandinista revolution. In the 1990s he worked with the Landless Workers' Movement in Brazil. In 2003, Shellenberger and allies launched the New Apollo Project to jumpstart a no-carbon energy revolution over the next 10 years. In 2008, Time named him "A Hero of the Environment." He co-founded the ecomodernist Breakthrough Institute, which advocates the use of advanced technologies such as nuclear power and agricultural biotechnology to decouple the economy from the ecology, allowing both humanity and the natural world to flourish. More recently, he founded Environmental Progress, which campaigns for, among other things, the deployment of clean modern nuclear power. He is an invited expert reviewer of the Intergovernmental Panel on Climate Change's next assessment report. So what does he say about climate change? "On behalf of environmentalists everywhere, I would like to formally apologize for the climate scare we created over the last 30 years," he wrote in an essay to promote his new book. "Climate change is happening. It's just not the **end of the world**. It's not even our most serious environmental problem." Needless to say, there are environmentalists everywhere who do not believe they have anything to apologize for. A group of six researchers assembled by the widely respected Climate Feedback fact-checking consortium rated his article as having low scientific credibility. Shellenberger doesn't devote much of Apocalypse Never to the science behind man-made climate change. He basically accepts the consensus that it's a significant problem and instead focuses on various claims about the harms it is supposedly already causing. In that promotional essay, he argues that (1) human being are **not causing** a "sixth mass **extinction**," (2) the Amazon rainforests are not the "**lungs of the world**," (3) climate change is not making **natural disasters worse**, and (4) fires have **declined 25 percent** around the world since **2003**. Shellenberger isn't denying the reality of man-made climate change. He's arguing that humanity is **already adapting** to the ways climate change has been making weather patterns evolve, and that we will continue to **adapt** successfully in the future. His book is ultimately a sustained argument that poverty is world's most important environmental problem, and that rising **prosperity** and **increasing technological prowess** will ameliorate or **reverse** most deleterious environmental **trends**.

### 1NC---Solvency---Defense Already

#### NATO is good in space---already have collective defense there!

TASS, 1-17 (TASS, Russia’s largest news agency, 1-17-2022, accessed on 6-18-2022, “NATO’s collective security principles to apply to outer space”, <https://tass.com/world/1389255?utm_source=google.com&utm_medium=organic&utm_campaign=google.com&utm_referrer=google.com>, HBisevac)

BRUSSELS, January 17. /TASS/. NATO has decided to extend its **collective defense** principles to outer space, according to the NATO’s overarching Space Policy that was made public on Monday. "At the 2021 Brussels Summit, Allies agreed that attacks to, from, or within space present a **clear challenge** to the security of the Alliance, the impact of which could **threaten** national and Euro-Atlantic **prosperity**, **security**, and **stability**, and could be as harmful to modern societies as a conventional attack. Such attacks could lead to the **invocation** of Article 5. A decision as to when such attacks would lead to the invocation of Article 5 would be taken by the North Atlantic Council on a case-by-case basis," the document reads. According to the document, NATO plans to **incorporate** space into the system of **collective** security and **defense**. "Space is an inherently global environment and any conflict that extends into space has the potential to affect all users of space. Even in cases where NATO is not involved in conflict, Allies’ space systems could be affected," it says. NATO pledges to carry out its activities in outer space within the **framework** of **international law**. "The free access, exploration and use of outer space for **peaceful purposes** is in the **common interest** of **all nations**. NATO and Allies will continue to carry out all activities in outer space in accordance with international law, including the UN Charter, in the interest of maintaining international peace and security and promoting international cooperation and understanding," the document reads. Apart from that, according to the strategy, NATO has **no plans** to become an **autonomous actor** in outer space. "NATO is not aiming to become an autonomous space actor. NATO will seek to complement and add value to the work of Allies and to engage with other relevant international organisations," it says.

### 1NC---Solvency---Disunity

#### NATO disunity wrecks any efforts.

Ronald Malloy, 21 (Ronald Malloy, Jr. Capt, United States Air Force, February 2021, accessed on 5-29-2022, Air University, Maxwell Air Force Base, “NATO’s Strategic Deficit”, HBisevac)

NATO’s attempts to solve refugee crises, fight wars far from Europe, and counter Chinese ambitions for hegemony would be **destined to fail**. NATO would fail due to **lacking unified commitment**, **not** from a **faulty strategic analysis** (Morcos, 2020). At present, NATO has 30 members. There can be **no broad commitment** to defense without **unity** in cause. For example, it is apparent that the most recent country to join NATO, North Macedonia, has **separate incentives** then its partner member, the **U**nited **S**tates. Nonetheless, North Macedonia, like all other countries of NATO, has interest in keeping Russia’s nationalistic ambitions out of their country. Although new nation-states have emerged, the same geographical regions highlighted in the Cold War are relative today. Indeed, many nations that exist today were once formally a part of the Soviet Union. Thus, returning to the original purpose of NATO is as valid today as it was in 1949. Solidifying **resolve** and **unifying** on a **common course** is the best way to return NATO’s prominence. It is important to note there were disagreements between members of NATO when combating the Warsaw Pact; however, mutual interest kept the alliance alive. This same mutual interest exists today within the revival of Russian aggression. Johnston et al. (2019) conjectured that “the degree to which NATO endures or indeed thrives appears to be a function of the continued relevance of the old security agenda.” NATO exists today to deter Russia’s unethical foreign ambitions, but membership **commitment** is **necessary** to meet the **demands** of the strategic environment.

### 1NC---Solvency---Article 5 Key

#### Clarification of article V is key

David H. Ucko 10, adjunct fellow at the Department of War Studies, King's College London"Resetting Article 5: Toward a New Understanding of NATO's Security Guarantees", World Politics Review, https://www.worldpoliticsreview.com/articles/6838/resetting-article-5-toward-a-new-understanding-of-natos-security-guarantees

For all this, the alliance badly needs a clarification of its collective security mechanism, for, though its current ambiguity may fool prospective adversaries, it really should not fool NATO itself. There is a need, in other words, to chart a middle path between traditionalists and revolutionaries, whereby NATO maintains a solidarity clause but comes to a new, narrower and shared understanding of its meaning and implications. The point would be to downgrade the expectations that come with NATO membership by talking more honestly, within NATO, about what the alliance is likely and able to commit to.

First, it would be necessary to convey, in private, to members that an Article 5 response is not automatic, but is rather the product of intensely political processes within each NATO state, and that even if a response is forthcoming, there is no way of guaranteeing that it will be timely or particularly effective. The language of an unflinching, immediate, collective and effective response may be appropriate for audiences outside of NATO, but not for internal discussion. Within the alliance, less grandstanding rhetoric and greater transparency would reduce the scope for obfuscation. The language of collective security would remain -- for symbolic reasons, for the deterrent role that Article 5 still plays and for the foundation it provides for retaliatory action. But the point would be to re-emphasize within the alliance the oft-forgotten provision of Article 5 whereby each member takes only "such action as it deems necessary" when fulfilling its security obligations.

Second, NATO would need to delineate much more clearly what types of threats it is capable of countering. No doubt a nontraditional attack can be as devastating as a military strike, but it does not follow that NATO is equally prepared to handle both. The decision regarding NATO's role in any incident must be based not only on the severity of a potential attack, but also on NATO's ability to mount an effective response. Whereas the language of solidarity following the Sept. 11 attacks was certainly appropriate, a case can be made that NATO ultimately overextended itself in invoking Article 5. The invocation established a dangerous precedent for the kinds of threats that the article might cover, many of which NATO lacks the expertise to deter, to forestall or to counter. Talking loudly about collective defense against non-traditional attacks without a concomitant ability to deliver when they occur is likely to provoke a crisis of credibility for the alliance.

Similar gaps between expectations and capabilities surround the issue of cybersecurity, which Secretary-General Rasmussen recently suggested should be covered by Article 5, as well as energy-security threats and economic warfare: NATO undoubtedly has a role to play in protecting its members from these potentially very harmful forms of attack, yet until the capability is created, it may want to interpret its security guarantees more narrowly. This also raises the question of how serious an attack in a nontraditional domain would need to be to trigger Article 5 considerations. Some informal criteria would need to be agreed upon to inform expectation, yet clearly this is also something that would need to be settled behind closed doors, so as not to invite attack and provocation under the established threshold or precisely where NATO's guarantees are the weakest.

Naturally, the prospect of agreeing within NATO to a more honest but weaker Article 5 regime will elicit much support among those who rely most on NATO's security guarantees. Nonetheless, greater transparency is preferable to false hope. A hardnosed stocktaking of what NATO can and cannot do would also provide for a more promising foundation on which progress could be made: a common appraisal of problems faced and a framework for finding limited solutions, where possible. This would also allow those nations that feel most vulnerable to make their own security arrangements, even if that means seeking relationships outside the alliance structure. In the event that such arrangements are inimical to NATO's interests, the onus would then be on the alliance itself to provide a preferable alternative. In that sense, greater transparency would make the self-interest of individual members the foundation of NATO's collective defense mechanism, rather than the need to ensure the alliance's solidarity or prove its relevance, the reasons most often used to justify Article 5 security guarantees today but whose rhetorical appeal rarely translates into action.

Upholding a security regime that is limited, patchy and short on substance is far from ideal, yet it would accurately reflect the alliance's current intentions, capabilities and political will. So long as both those making the promise of collective defense and those hoping to take it up are mutually aware of its true possibilities and very real limitations, it may be the least-bad and most-viable way out of an awkward situation.

#### Without clarifying definitions, the plan is useless

Christopher Woody 18, Washington, DC-based editor covering military and defense issues and foreign affairs.“ NATO leaders are worried about cyberattacks, but it's not clear they all agree on what that means,” Business Insider, 10/1/18, https://www.businessinsider.com/nato-leaders-agree-cyberattacks-are-threat-but-cant-agree-definition-2018-10

NATO leadership appears to be in agreement that cyberattacks and forms of hybrid warfare that involve it are a growing threat to the alliance, but it's still not totally clear how its members define and evaluate that threat, and that raises questions about how they'll respond to an attack.

In late 2014 — several months after the Russian annexation of Crimea and incursion into Ukraine — NATO leaders agreed that a large-scale cyberattack on one member could be considered an attack on the entire alliance, potentially leading to a military response.

"Today we declare that cyber defense is part of NATO's core task of collective defense" NATO's secretary general at the time, Anders Fogh Rasmussen, said of the decision.

The emphasis on the cyber realm grew considerably in 2017.

At the beginning of that year, NATO announced plans to spend more than $3 billion to upgrade its satellite and computer technology over three years, including some $900 million on computer systems that help command air and missile defenses and $80 million to improve protection against cyberattacks at NATO's 32 main locations.

At the end of that year, NATO announced plans to increase its cyber-defense capabilities, adapting its command structure to integrate cyber weapons into its military operations in what one of the alliance's former cyber-defense advisers called one of the organization's biggest policy changes in years.

Cyberattacks, along with other forms of hybrid warfare that fall short of open combat, have complicated things for NATO, current Secretary General Jens Stoltenberg said in September.

With cyber operations, Stoltenberg said, "it's very hard to tell exactly who attacked you. It's very hard to say exactly where it takes place."

"So we live in a ... completely different security environment with a more blurred line between peace and war," he added.

In an interview on the sidelines of the UN General Assembly in New York City, Spanish Prime Minister Pedro Sanchez echoed that view.

"In my opinion, cybersecurity, a fight against hybrid wars or strategies, is one of the major challenges for NATO," Sanchez said during an interview with Reuters, adding that the alliance needs to remain vigilant on its eastern and southern frontiers as well.

Despite the growing focus and increased spending, NATO's response to cyber threats appears to have a problem with definitions — namely, what constitutes an attack and how severe it is.

In late 2017, after officials from France, NATO, and the EU offered several widely varying tallies of cyberattacks in 2016, Stefan Soesanto, a former cybersecurity and defense fellow at the European Council on Foreign Relations, asked their agencies to ask what incidents were included in their totals and if their standards were public, receiving no response or no comment from each.

"But without published standards and discernable metrics, such warnings are of no real value to the public," Soesanto wrote for Defense One in September.

"We simply do not know whether 6,000 annual attacks against NATO's infrastructure is a lot or whether any of the 24,000 attacks against the French [Ministry of Defense] were serious," Soesanto added. "All we know is that something was counted by someone somehow to somewhat explain the threat environment."

Further inquiry found that even within countries, different agencies had different definitions for what constituted a cyberattack and different ways of determining their severity.

This incoherence creates several problems, according to Soesanto.

The lack of a unifying standard will lead public officials to over- and under-state such incidents, which in turn undermines the public's ability to understand the threat.

A lack of cohesion also hinders cyber-defense efforts within and between governments, and, perhaps most important, muddies the rules of engagement.

"NATO member states are embroiled in discussing cyber deterrence frameworks, offensive operations, and creating norms and rules for state behavior in cyberspace, they have still not reached consensus on how to actually count and categorize cyber incidents across the alliance," Soesanto writes.

### 1NC---Solvency---Hardening Fails

#### Asset hardening aggravates security dilemmas AND doesn’t change adversary calculus.

Roseberry ’15 [Craig; April 1; Colonel for the United States Army, manuscript submitted in partial fulfillment of the requirements of a Master of Strategic Studies Degree and in coordination with Dr. Jeffrey Groh from the Department of Distance Education; U.S. Army War College Strategic Research Project, “Current Challenges in Deterring the Use of Space Weapons,” <https://publications.armywarcollege.edu/pubs/588.pdf>; RP and GR]

Altering the Calculus of Deterrence Assuming that states will behave as rational actors when contemplating attacks in space, they will conclude on maintaining security when their calculations favor the avoidance of risk instead of seeking the benefit of aggression. To influence these calculations, the United States must deny the benefit of an attack and make sure that adversaries are aware that any benefits would be insignificant compared to the anticipated response. The National Security Space Strategy calls for this deterrence by denial approach by “strengthening the resilience of our architectures” and use of cross-domain solutions to maintain capabilities in the event of an attack.71 Such methods generally deny the benefits of an attack by adding redundancy, which is extremely costly to achieve and ultimately aggravates the concerns of those facing security dilemmas. Even so, these strengthening and cross-leveling functions have not changed the current risk-benefit equation since nations are still pursuing anti-satellite technologies. Reliance on the current passive safeguards such as systems hardening, system dispersal, and maneuvers amounts to maintaining the status quo. 72 In reality, these efforts generally prevent the consequences of an attack from becoming devastating; they do not necessarily deny benefits of objective to the adversary. Redundancy may not be the best approach. Demonstrations, military exercises, as well as technical analyses can effectively display to potential adversaries that aggressive actions will not afford them their desired asymmetric military advantage. While such efforts reduce the consequences of a potential attack, the effort must focus on increasing the effectiveness of the deterrence strategy. Effective deterrence begins with a firmer declaratory policy that works in reducing miscalculation by ensuring those that are contemplating aggressive actions in space perceive the costs resulting from those actions as prohibitive.73 Without these clear limits denoting the framework of escalation, others might not understand the deterrent message.74 Declarations regarding the right to respond to aggression in space provide the first step in a process that must ensure that potential aggressors understand the nation’s resolve to respond to aggressive acts in space.

### 1NC---Solvency---Logistical Hurdles

#### Logistical challenges overwhelm any chance of effective cooperation.

Sam Wilson & Colleen Stover 21. Senior policy analyst for the Center for Space Policy and Strategy at The Aerospace Corporation; Project manager and researcher at The Aerospace Corporation’s Center for Space Policy and Strategy. “Defense Space Partnerships: A Strategic Priority.” Aerospace Center for Space Policy and Strategy. 09-17-2020. https://csps.aerospace.org/papers/defense-space-partnerships-strategic-priority //EM

Challenges

Of course, there are legitimate reasons why the United States has not actualized more defense space partnerships. Part of this stems from the legacy of the Cold War in which the United States and the Soviet Union were the two major powers in space. A RAND report from 2000 says, “Historically, the predominance of U.S. investment in and experience with space systems has minimized the consideration of space as an area with potential interoperability problems,” noting that “the United States has provided the bulk of products and services derived from space assets.”28 Because the United States had overwhelming capabilities in space relative to allies, little could be gained by defense space partnerships. Nowadays, it is rare to hear arguments against collaborating in the defense space domain. But there are deceptively simple yet significant obstacles in the way of realizing more defense space collaboration. Among these are classification and releasability of information; technology and logistics; and organizational issues. Although the mindset has changed around defense space partnerships, these mundane challenges will need to be addressed for the United States to establish more and deeper space partnerships.

Classification Levels and Releasability.

No issue presents a greater impediment to defense space partnerships than an inability to share information. In conversations with allied attachés and exchange officers, classification and releasability routinely came up as the biggest obstacle they perceived to more effective security space collaboration. We need to protect information that helps the United States maintain its advantage, but it is possible to overdo secrecy, and we should continuously evaluate the classification and releasability of information in the space domain to better balance secrecy with collaboration.29 Defense space information is frequently classified and often with a NOFORN (not releasable to foreign nationals) caveat. Such classification or dissemination control limits defense space collaboration. For example, a foreign partner could share sensing data with the United States, which is then processed through NOFORN software and made unavailable to the very country that captured it.

This issue has received attention at senior levels. General John Hyten has stated the need to remove NOFORN designations where possible.30 In 2019, then Air Force Chief of Staff, General David Goldfein said with respect to space collaboration: “One of the challenges we have is that we over-classify things and that gets in the way of information sharing.”31 The Air Force is currently implementing a security classification review looking to improve information sharing for space operations. The experts we spoke with noted that although the United States has been making progress in this area, classification remains a major obstacle for defense space partnerships.

Compatibility in Standards and Technology.

Defense space partnerships present logistical hurdles for sharing information too, including not having compatible systems and standards. Even in cases where U.S. officials are permitted to share sensitive information with partners, experts we spoke with pointed out that the United States and the partner country often cannot collaborate because they do not have the same or compatible classified conferencing capabilities or networks. The DOD’s classified SIPRnet Secret-level computer network, for instance, was not designed to be a combined or allied system.32 In some cases, defense space partnerships also require allies to align their standards, such as for data. In space situational awareness data sharing, for instance, government, industry, and international organizations have been adopting various standards for sharing orbital information, which is requiring complex data translation services or preventing sharing altogether.

Organizational.

Another challenge is that with the myriad of organizations in the U.S. government that work on defense space partnerships and sharing, it is not easy for allies to know whom to talk to. Roles and responsibilities are spread out across the Department of Defense, the Intelligence Community, the Department of State, and others, and there is no single clear entry point for partners or potential partners to engage. The U.S. Space Force headquarters could be the entry point for training and exercises, U.S. Space Command for space operations collaboration, Office of the Director of National Intelligence for intelligence sharing, the National Geospatial-Intelligence Agency for imagery sharing and training, Space and Missile Command for combined space system acquisition, the Office of the Secretary of Defense for broader discussions. This issue surfaced in our discussions with allied attachés and foreign exchange officers. One official from a partner nation offered an anecdote in which an official from a separate nation called for help because he was unable to connect with the right people on the U.S. side. Many said that navigating the “U.S. space behemoth,” as one official put it, and knowing whom to contact is extremely challenging.33 Figure 1 captures the organizations that have a role in international security space collaboration.

### 1NC---Solvency---Say No---Intel Sharing

#### Conflicting interpretations and fights over intel sharing block unification.

Sophie Arts, 18 (Sophie Arts, Program Officer of Security and Defense at GMF in Washington, 12-13-2018, accessed on 5-29-2022, German Marshall Fund, “Offense as the New Defense: New Life for NATO’s Cyber Policy”, <https://www.gmfus.org/publications/offense-new-defense-new-life-natos-cyber-policy>, HBisevac)

While the United States’ announcement that it would contribute its capabilities could help lend credibility to NATO’s cyber deterrence, further clarification is **needed** within NATO, particularly when it comes to its **command structure** in the **cyber domain**. Without clarity on this front, it is **hard to imagine** that the **29 NATO allies** who have **different threat perceptions**, and face issues of **cohesion** and **trust**, could agree on effective response scenarios in a crisis situation. This is particularly critical, because **cyber operations** will be subject to **political approval** by the **NATO allies**. The new Cyber Operations Center, which should be fully operational in 2023, could play an important role in that respect, but the lack of operational authority may pose a significant challenge.37 According to NATO, the center aims to “strengthen cyber defenses and integrate cyber capabilities into NATO planning and operations.”38 But as the U.S. declaration on its potential cyber support to NATO confirms, it appears at this point that the center will serve to coordinate rather than oversee operations. This, **coupled** with allies’ **unwillingness** to **share intelligence** that may be **critical** to NATO’s **strategic efforts**, makes it **difficult** to **envision** the center as an **effective tool** in implementing a coherent top-down **cyber strategy** in the near future.

### 1NC---Solvency---Say No---EU/Canada

#### EU and Canada say no because of interest alignment with China.

François Heisbourg, 20 (François Heisbourg, IISS senior adviser for Europe and special adviser of the Paris-based Fondation pour la Recherche Stratégique, 3-23-2020, accessed on 5-16-2022, Routledge, Survival; Global Politics and Strategy, “NATO 4.0: The Atlantic Alliance and the Rise of China”, https://doi.org/10.1080/00396338.2020.1739950, HBisevac)

Furthermore, even before Trump’s current term at the White House expires, America’s policy as to its European and Asian allies will be **increasingly shaped** by **US perceptions** of the role allies play in helping or hindering **US objectives towards China**. The ongoing dispute between the US and China concerning the acquisition of 5G networks is the **first major test** of this proposition. America has openly threatened to curb **intelligence sharing** with its closest allies if they choose to entrust China’s Huawei Technologies Company with setting up their 5G networks.15 It remains to be seen what practical conclusions the US will actually draw if major allies such as France, Germany, Italy or the UK decide to ‘go Chinese’. If no key European ally chooses Huawei, following in Japan’s and Australia’s footsteps, that outcome will be due at least in part to the strength of America’s campaign calling attention to the security and strategic implications of their 5G decisions. Given the **commercial advantage** enjoyed by **Huawei** as a result of the infrastructure it built up as part of 3G and 4G networks and what is apparently massive state aid, it could normally expect to be selected as a 5G prime contractor in many markets in the absence of **broader security** and **strategic considerations**.16 As China’s rise **consolidates** and as its **assertiveness** increases over time, NATO will be systematically **forced** to choose between working **with** the US, **without** the US or **against** the US when it comes to **relations** with China. China itself well understands this. It is handling the precedent-setting 5G confrontation as a first-order political issue. Threats from Chinese ambassadors in Europe and others arose from November 2019 onwards, while the general tone of Chinese diplomacy in Europe and Canada deteriorated, with punishments imposed on a broad range of issues.17 Against this backdrop, the relationship between the US and its NATO allies will be increasingly prone to **misunderstanding** and **uncontrolled disagreements**. It is in the North American and European interest to work together to avoid the former and reduce the latter to manageable proportions. Because European and Canadian interests may **align more closely** with China’s policies than with America’s on a number of key issues – such as the global financial order, the extraterritorial reach of American law and climate change – any US–Europe mechanism for coping with differences would need to have a **heavily transactional cast**, with or without Trump. The basic **structural differences** between the **new international system** and its **bipolar** and **unipolar predecessors** will further complicate **transatlantic interactions**.

### 1NC---Solvency---Say No---Germany

#### Germany opposes countering Russia.

Judy Dempsey, 1-26 (Judy Dempsey is a nonresident senior fellow at Carnegie Europe and editor in chief of Strategic Europe, 1-26-2022, accessed on 5-29-2022, Carnegie Europe, “Why Germany Is Undermining NATO Unity on Russia”, <https://carnegieeurope.eu/2022/01/26/why-germany-is-undermining-nato-unity-on-russia-pub-86279>, HBisevac)

As Russia continues its **military buildup** along Ukraine’s borders, NATO and the EU are trying to project a strong, united front on these extraordinary and dangerous developments. But Germany is **undermining** that unity, leaving the **West weaker** and **more divided**. Below, Strategic Europe editor-in-chief Judy Dempsey digs into what’s driving Germany’s actions on this latest crisis. WHY IS GERMANY RELUCTANT TO FOLLOW NATO ALLIES ON UKRAINE? Publicly, Berlin **toes the NATO line** on sending troops and equipment to the Baltic states and Romania in order to boost the alliance’s eastern flank. In practice, it does not want to send any **defensive weapons** to Ukraine. It blocked Estonia from sending such equipment, which had been made in Germany, and a UK aircraft carrying military equipment to Ukraine detoured around German airspace. The German political establishment believes such moves will **destabilize Europe** and make it more difficult to have a **dialogue** with Russia. BUT ISN’T RUSSIA TRYING TO DESTABILIZE UKRAINE? **Germany** **doesn’t see it that way**. There is a part of the German establishment that **sees Ukraine** through the **prism** of **Russia**. For historical reasons, this group views Ukraine, Belarus, and Georgia as a **cordon sanitaire** between Europe and Russia. There’s a legacy of both centuries-old rivalry and cooperation between Russia and Germany. And there’s the immense historical guilt of Germany’s role in World War II. Ukraine and Belarus suffered horribly under Adolf Hitler’s occupation, but somehow, these facts don’t enter into the public discourse. The historical guilt is centered on Russia, and German politicians often refer to this legacy. DON’T BELARUS, GEORGIA, AND UKRAINE ONE DAY WANT TO JOIN BOTH NATO AND THE EU? Yes. Joining the EU is a long way off, but that is their goal. That is what drives the reformers when it comes to strengthening democracy, the rule of law, and an independent judiciary. That’s what scares Russia: truly independent, democratic countries on its border. And NATO is its red line. Putin does not want any Eastern European countries joining this Western security alliance. If they did, the United States would, from the security and military points of view, dominate not only Western Europe but also Eastern Europe. Russia would lose any leverage to influence events among its immediate western neighbors. NATO would defend these countries if they were threatened or attacked. That is why Putin is threatening Ukraine and demanding a water-tight commitment from NATO that Ukraine will not join. He does not want Ukraine integrated into the Euro-Atlantic structures of NATO or the EU, nor does he want a secure and democratic Ukraine on his doorstep. The fear of contagion would be too big. HOW ARE NATO ALLIES REACTING TO GERMANY’S RELUCTANCE? With anger. The Baltic states and Central European countries believe Germany doesn’t understand their security concerns or Russia’s intentions. They believe the German **political** and **business establishments** are **so close** to **Russia** that they don’t want to upset those **decades-long ties**. DOES GERMANY’S STANCE HAVE ANY SUPPORT? Yes, from France, but for different reasons. President Emmanuel Macron wants a European, not a U.S-led, response to this crisis. He wants Europe to have its own security and defense policy that would create a kind of “strategic autonomy.” In Macron’s view, the global geostrategic context has changed so much that Europe has to develop its own instruments to defend itself and shape policy. But Germany has **no strategic compass**. Because of World War II, it is locked into a pacifist way of thinking. This explains why it is uncomfortable with Macron’s idea, as are the Baltic states, Poland, and other Central European countries. WHY IS THAT? The Ukraine crisis has made Central Europe even more pro-NATO and pro-American because of Germany’s closeness to Russia and Macron’s ambitions to have a militarily and strategically capable Europe. These countries will likely put a brake on any future EU integration, especially when it comes to security, defense, and foreign policy, where consensus would give way to simple majority voting under proposed reforms. They don’t trust France’s intentions, which they see as weakening Europe’s relationship with NATO. They don’t trust Berlin because it is seen as too pro-Russia. This is bad news for the EU. HOW THEN ARE EU AND NATO MEMBERS SEEKING A WAY OUT OF THIS CRISIS? With the threat of more sanctions and with an increased NATO and U.S. military presence in the Baltic states, Poland, and other Central European countries. The United States is also stepping up its diplomatic efforts with Moscow to deescalate the crisis. As yet, there’s no consensus among members of either the EU or NATO on the scope of the sanctions. HOW DOES ENERGY FACTOR INTO GERMANY’S RELATIONSHIP WITH RUSSIA? Currently, **natural gas** from Russia—which accounts for **more than half** of Germany’s gas imports and an average of 40 percent of the rest of Europe’s imports—must transit through Poland or Ukraine. But the planned Nord Stream 2 gas pipeline will allow Russia to directly send more gas to Europe under the Baltic Sea. Some European countries **want** Germany to **stop** the pipeline, which will likely make Germany become more dependent on Russian gas. And because Poland and Ukraine won’t be needed to send Russian gas to Europe (one of Moscow’s goals in building Nord Stream 2), Ukraine will be even more **vulnerable** to **pressure** from Moscow, particularly when it comes to gas deliveries. Nord Stream 2 weakens Ukraine’s leverage as an access point for Russia to the European energy market. Yet for all that, Germany **refuses** to **stop** **the pipeline**.

### 1NC---Solvency---Space Weather---SSA Fails

#### Even if there was a catastrophic space weather storm, we would not be able to do anything about it!

Martin Weiss & Mathew Weiss 19. Researcher at American Jewish University; Analyst at the UCLA-Olive View Medical Center, “An assessment of threats to the American power grid”. *Energy, Sustainability and Society* volume 9, Article number: 18. October 2019. <https://doi.org/10.1186/s13705-019-0199-y> //EM thx Khirn

2. The 15–45 min warning time of a geomagnetic storm provided by space satellites (ACE and DSCOVR) will be insufficient for operators to confer, coordinate, and execute actions to prevent grid damage and collapse.

Testimony of Edison Electric Institute official Scott Aaronson under questioning by Senator Ron Johnson in a hearing before the Senate Homeland Security and Governmental Affairs Committee in 2016 encapsulates some of the issues. Video of the exchange is available on the web [29]. The Edison Electric Institute (EEI) is the trade association that represents all US investor-owned electric companies.

Johnson: Mr. Aaronson, I just have to ask you – the protocol of warning 15–30 min – who is going to make that call? I mean, who is going to make that for a massive geomagnetic disturbance, that nobody knows how many of these transformers are going to be affected. Who is going to make that call to shut them off line – to take them off line – so those effects do not go through those wires and destroy those large transformers that cannot be replaced?

Aaronson: So, the grid operators are tightly aligned. We talked about the fact that there are 1900 entities that make up the bulk electric system. There are transmission operators and so on…

Johnson (interrupting): Who makes the call? Who makes the call – we are going to shut them all down in 30 min, in 15 min?

Aaronson: It’s not as simple as cutting the power. That’s not how this is going to work but there is again, there is this shared responsibility among the sector.

## Case Turns

### 1NC---CT---Mega Constellations Bad

#### Satellite deployment makes undersea cables obsolete.

Varun Rao, 20 (Varun Rao is the Data Science Lead at the Ford Motor Company, Rahul Rao is a Data Analytics and Applications Engineer at Ford Motor Company, Yasir Aheer is the Senior Manager and Accenture, 9-9-2020, accessed on 6-24-2022, Our Few Cents, “The Cloud beneath our feet”, <https://www.ourfewcents.com/post/the-cloud-beneath-our-feet>, HBisevac)

In a world where our doorbells, headphones and printers are wireless, it may surprise readers to read that [over **97%**](https://policyexchange.org.uk/wp-content/uploads/2017/11/Undersea-Cables.pdf) of **internet traffic** is transmitted through physical fibre-optic **cables**, laid on the **sea bed**.

Each undersea cable consists of between [4 and 200 optical fibres](https://policyexchange.org.uk/wp-content/uploads/2017/11/Undersea-Cables.pdf), each of which can transmit about **400GB** **per second**. There are approximately [1.2 million km](https://www.nytimes.com/interactive/2019/03/10/technology/internet-cables-oceans.html) worth of undersea cables currently in operation, a spider’s web of 0s and 1s crisscrossing the Earth carrying an estimated [**$10 trillion** of financial transfers](https://policyexchange.org.uk/wp-content/uploads/2017/11/Undersea-Cables.pdf), and over [1 sextillion bytes](https://au.pcmag.com/features/57830/why-satellite-internet-is-the-new-space-race) of data every day. Most cables are **no thicker** than a **garden hose**, an astonishing fact given they transmit data at the rate of [terabytes per second](https://edition.cnn.com/2019/07/25/asia/internet-undersea-cables-intl-hnk/index.html).

Worryingly, these cables are largely protected **only** by the **sheer vastness** of the ocean (a topic we’ve [explored previously](https://www.ourfewcents.com/post/twenty-thousand-leagues-under-the-sea)). Given how tenuous this safeguarding is, it is unsurprising that there are over 200 cable failures every year. Most people are oblivious to cable damage incidents because [providers](https://internethealthreport.org/2019/the-new-investors-in-underwater-sea-cables/), mostly Internet giants like Google, Facebook, Amazon and Microsoft, have deliberately built redundancy into their systems, meaning that most countries are serviced by multiple cables. In the event that one cable suffers a failure, internet traffic is seamlessly re-routed to the existing intact cables, if there are any. However, a total of [19 countries](https://www.techradar.com/au/news/internet-access-hangs-by-a-thread-for-hundreds-of-millions) rely on a **single cable** to provide them internet, including Kazakhstan, Azerbaijan, Togo and Sierra Leone. While countries like the US, UK and Japan are supported by 91, 54 and 26 cables respectively, over 5% of the world’s population live in countries supported by only two cables. As island nations, Australia and New Zealand are particularly vulnerable in this respect, the latter being supported by just three cables.

The majority of cable failures each year are inadvertently [caused by humans](https://edition.cnn.com/2019/07/25/asia/internet-undersea-cables-intl-hnk/index.html), rather than natural causes. The aforementioned blackout in Tonga was apparently caused by a ships’ [anchor](https://www.abc.net.au/radio-australia/programs/pacificbeat/tonga-cable-outage/10765642) damaging an undersea cable. Eight cables were damaged during an earthquake in 2006, causing [internet outages](https://edition.cnn.com/2019/07/25/asia/internet-undersea-cables-intl-hnk/index.html) in Taiwan, Hong Kong, China, Japan, Korea and the Philippines. When ships accidentally severed cables in the Mediterranean in 2008, [80% of the connectivity](https://policyexchange.org.uk/wp-content/uploads/2017/11/Undersea-Cables.pdf) between Europe and the Middle East was knocked out in a matter of hours. In 2017, Australians were warned about [slow internet speeds](https://www.news.com.au/technology/online/aussie-web-users-warned-to-expect-slow-speeds-for-at-least-six-weeks-after-undersea-cables-damaged/news-story/5ca81511fe7c51f8ee1cb5cfbac85e51) due to cable damage caused by typhoons. In 2018, the entire country of Mauritania was forced offline when a fishing trawler [damaged](https://www.techradar.com/au/news/internet-access-hangs-by-a-thread-for-hundreds-of-millions) an important cable link to Europe. 28 million Yemenis suffered a similar fate in January 2020, when a single cable was severed.

That’s just accidental breakages. There remains the terrifying possibility of **deliberate attacks** by unfriendly agents. We’ve previously expounded on the dangers of [confidential messages being decrypted](https://www.ourfewcents.com/post/encryption-a-primal-need) by hostile actors. What **better avenue** for this [manner of **espionage**](https://www.theatlantic.com/international/archive/2013/07/the-creepy-long-standing-practice-of-undersea-cable-tapping/277855/) than **poorly guarded** optic fibres strung out in the vastness of the ocean, far from **prying eyes**? Far more terrifying is the prospect of a complete loss of internet connectivity for entire countries, [crippling economies](https://policyexchange.org.uk/wp-content/uploads/2017/11/Undersea-Cables.pdf) and causing **massive social unrest**.

The cables are also vulnerable to attack, bizarrely enough, from [sharks](https://www.weforum.org/agenda/2016/11/this-map-shows-how-undersea-cables-move-internet-traffic-around-the-world/). Given that sharks are so ancient they reportedly [predate trees](https://www.smithsonianmag.com/smart-news/respect-sharks-are-older-than-trees-3818/), it is ironic that one of the newest inventions on Earth, the internet, is vulnerable to one of the oldest. It appears that the truth is once again stranger than, or at least as strange as, fiction - in the comedy The IT Crowd, technically incompetent IT Manager Jen Barber is convinced the “Internet” in fact lives inside a small black box\*.

So why do we use physical undersea cables, with all the attendant risks, when we could use satellite communications instead? Simply put, because fibre-optic cables use light to transmit information, they are both faster and cheaper to use for the mind boggling scale of internet traffic. Rather surprisingly, given the discussion above, the standard measure of cable downtime is measured in a mere [seconds per year](http://www.ieee-rogucci.org/files/The%20ROGUCCI%20Report.pdf), indicating their reliability in adverse conditions. And of course, repairs are far easier to undertake on the seabed than in Earth orbit.

Is the future in the skies?

Although the first Space Race was aimed at setting foot on the Moon (a swashbuckling story we’ve covered [here](https://www.ourfewcents.com/post/the-space-race)), of late focus has shifted to launching satellites into Earth orbit. As a result, there are now over [**2600 satellites**](https://www.ucsusa.org/resources/satellite-database#:~:text=In%2Ddepth%20details%20on%20the,purpose%2C%20and%20other%20operational%20details) in orbit, with 180 belonging to SpaceX specifically to provide [internet services](https://www.theverge.com/2020/1/14/21043229/spacex-starlink-satellite-mega-constellation-concerns-astronomy-space-traffic).

Looking ahead, satellite internet would offer the next quantum leap in internet accessibility, while potentially sidestepping some of the **intractable issues** faced by undersea cables. Remarkably, the development of geostationary satellite communication was [heavily influenced](http://lakdiva.org/clarke/1945ww/) by a 1945 [publication](http://lakdiva.org/clarke/1945ww/1945ww_oct_305-308.html) by the prescient sci-fi author Arthur C. Clarke, a full 20 years before the first commercial example was launched.

#### Cable disruptions obliterate the internet.

James Kraska, 20 (James Kraska, chair and professor of International Maritime Law at the U.S. Naval War College, visiting professor at Harvard Law School, distinguished fellow at Law of the Sea Institute, University of California Berkeley School of Law, permanent member of the Council on Foreign Relations, 7-10-2020, accessed on 6-24-2022, Lawfare, “Submarine Cables in the Law of Naval Warfare”, <https://www.lawfareblog.com/submarine-cables-law-naval-warfare#:~:text=Article%2054%20of%20the%201913,blockade%20of%20the%20enemy%20state>., HBisevac)

No technology is as profoundly important to the global economy as the internet, which is **dependent** on the security of a **vast network** of some 750,000 miles of **seabed cables** that criss-cross the oceans’ depths. The interdependence of global submarine communication systems means that a break in one cable can have **cascading effects** on internet access to **distant states**. While the rules to protect this critical infrastructure in peacetime should be refurbished, the need to further develop the rules to secure this global infrastructure during periods of armed conflict is perhaps even more compelling. Although several peacetime treaties protect submarine cables from disruption and criminal acts, albeit weakly, the rules that apply during naval war are even more antiquated. Because the law of naval warfare is principally based on custom and state practice rather than treaties, there is considerable uncertainty over how submarine cables would fare in conflict at sea.

#### Internet disruptions are existential risks.

Nick Merrill 21, Director of the Daylight Lab at the UC Berkeley Center for Long-Term Cybersecurity, 9/27/2021, “Like our planet, the Internet is in danger,” https://nickmerrill.substack.com/p/like-our-planet-the-internet-is-in?s=r

While users’ experience of the Internet is always local,1 Internet infrastructure is truly global. It unfolds across diverse material forms: light pulses under the sea, radio waves through the air, electricity through copper wires under the earth. There is nowhere on our planet where this infrastructure isn’t. You can get an Internet connection anywhere on the surface of the earth. For me, this image of the planet evokes both wonder and anxiety. It’s something incredible, but it’s also something that can destroy us. Like our planet, the Internet is in danger. And, like the planet, our species could go down with the ship.2 If the Internet were to destabilize, industrial collapse could well follow—locally, regionally, or globally. Without hyperbole, how we steward the Internet will determine the fate of our species. We cannot approach climate change without a global internet, let alone manage a global system of trade.3 A changing climate, aging infrastructure, and an increasingly multi-polar international stage has produced a recipe for disaster—or rather, for numerous disasters—which I expect would fall differentially along the usual lines of power and privilege.4 Footnote 3. 3 More people are aware of the existential risk of AI than the existential risk of Internet instability, even though the Internet is the medium through which AI operates! Footnote 4. 4 Global or repeated meltdowns (i.e., frequent, widespread, and prolonged periods of unexpected behavior) could cause systems of pricing, trade, logistics, and international finance to disintegrate in unpredictable ways across diverse geographies and timescales.

### 2NC---CT---Mega Constellations Bad

#### Early-warning miscalculation.

Bryan Clark 16, Senior Fellow with the Center for Strategic and Budgetary Assessments, “Undersea cables and the future of submarine competition,” *Bulletin of Atomic Scientists* 72(4)

Given the likely economic and military impacts of cable breaks, the ability to threaten or protect submarine cables and their shore landings will be increasingly important in future conflicts. In a crisis, an aggressor could use multiple coordinated attacks on cables to compel an opponent to back down or employ them as part of an opening offensive to cut off the defender’s military forces from national commanders, intelligence data, and sensor information. Cable attacks could also be highly destabilizing, since they could prevent a nuclear-armed opponent from controlling and monitoring its strategic weapons and early-warning systems. In response, the country targeted could choose to place its nuclear weapons in a higher alert condition – or initiate a preemptive attack.

#### And submarines.

Bryan Clark 16, Senior Fellow with the Center for Strategic and Budgetary Assessments, “Undersea cables and the future of submarine competition,” *Bulletin of Atomic Scientists* 72(4)

Stability in international relations depends in part on predictability, and the ability of targets to detect attacks and respond appropriately. Emerging changes in undersea warfare threaten to undermine today’s relative stability – including essential underwater infrastructure like submarine cables – through the loss of surveillance information and command-and-control capabilities, or risks to “second strike” nuclear capabilities of ballistic-missile submarines. To sustain their national security and preserve stability, large economies and nuclear powers will need to improve their ability to monitor and control the waters off their shores, just as they do the skies above their lands.

#### Which circumvents defense.

Peter Hayes 18, Director of the Nautilus Institute and Honorary Professor at the Centre for International Security Studies at the University of Sydney, 4/28/2018, “Off the Beach: Underwater Warfare in The 21st Century,” https://nautilus.org/napsnet/off-the-beach-underwater-warfare-in-the-21st-century/?view=pdf

From being the most secure, lost in the deep ocean, and therefore the ultimate and unassailable second strike force that could and would retaliate, no matter what happened to the homeland, submarine nuclear forces and their antithesis became the most provocative weapons of all. These forces were no longer the ultimate guarantor of “strategic stability,” better called the balance of terror, instead they were less controllable due to distance and communications difficulties and more prone to pre-delegation of nuclear-use authority in case the home national command disappeared off the periscope, possibly literally. Their weapons were now the most rapidly deliverable even compared to missiles or forward-deployed fighter bombers in Alaska, Europe and East Asian bases in Japan, Korea and Guam.

#### And internet collapse would wreck civilization.

David Eagleman 10, Neuroscientist at Baylor College of Medicine, 9/11/2010, http://www.wired.co.uk/magazine/archive/2010/12/start/apocalypse-no

Many great civilisations have fallen, leaving nothing but cracked ruins and scattered genetics. Usually this results from: natural disasters, resource depletion, economic meltdown, disease, poor information flow and corruption. But we’re luckier than our predecessors because we command a technology that no one else possessed: a rapid communication network that finds its highest expression in the internet. I propose that there are six ways in which the net has vastly reduced the threat of societal collapse.

Epidemics can be deflected by telepresence

One of our more dire prospects for collapse is an infectious-disease epidemic. Viral and bacterial epidemics precipitated the fall of the Golden Age of Athens, the Roman Empire and most of the empires of the Native Americans. The internet can be our key to survival because the ability to work telepresently can inhibit microbial transmission by reducing human-to-human contact. In the face of an otherwise devastating epidemic, businesses can keep supply chains running with the maximum number of employees working from home. This can reduce host density below the tipping point required for an epidemic. If we are well prepared when an epidemic arrives, we can fluidly shift into a self-quarantined society in which microbes fail due to host scarcity. Whatever the social ills of isolation, they are worse for the microbes than for us.

The internet will predict natural disasters

We are witnessing the downfall of slow central control in the media: news stories are increasingly becoming user-generated nets of up-to-the-minute information. During the recent California wildfires, locals went to the TV stations to learn whether their neighbourhoods were in danger. But the news stations appeared most concerned with the fate of celebrity mansions, so Californians changed their tack: they uploaded geotagged mobile-phone pictures, updated Facebook statuses and tweeted. The balance tipped: the internet carried news about the fire more quickly and accurately than any news station could. In this grass-roots, decentralised scheme, there were embedded reporters on every block, and the news shockwave kept ahead of the fire. This head start could provide the extra hours that save us. If the Pompeiians had had the internet in 79AD, they could have easily marched 10km to safety, well ahead of the pyroclastic flow from Mount Vesuvius. If the Indian Ocean had the Pacific’s networked tsunami-warning system, South-East Asia would look quite different today.

Discoveries are retained and shared

Historically, critical information has required constant rediscovery. Collections of learning -- from the library at Alexandria to the entire Minoan civilisation -- have fallen to the bonfires of invaders or the wrecking ball of natural disaster. Knowledge is hard won but easily lost. And information that survives often does not spread. Consider smallpox inoculation: this was under way in India, China and Africa centuries before it made its way to Europe. By the time the idea reached North America, native civilisations who needed it had already collapsed. The net solved the problem. New discoveries catch on immediately; information spreads widely. In this way, societies can optimally ratchet up, using the latest bricks of knowledge in their fortification against risk.

Tyranny is mitigated

Censorship of ideas was a familiar spectre in the last century, with state-approved news outlets ruling the press, airwaves and copying machines in the USSR, Romania, Cuba, China, Iraq and elsewhere. In many cases, such as Lysenko’s agricultural despotism in the USSR, it directly contributed to the collapse of the nation. Historically, a more successful strategy has been to confront free speech with free speech -- and the internet allows this in a natural way. It democratises the flow of information by offering access to the newspapers of the world, the photographers of every nation, the bloggers of every political stripe. Some posts are full of doctoring and dishonesty whereas others strive for independence and impartiality -- but all are available to us to sift through. Given the attempts by some governments to build firewalls, it’s clear that this benefit of the net requires constant vigilance.

Human capital is vastly increased

Crowdsourcing brings people together to solve problems. Yet far fewer than one per cent of the world’s population is involved. We need expand human capital. Most of the world not have access to the education afforded a small minority. For every Albert Einstein, Yo-Yo Ma or Barack Obama who has educational opportunities, uncountable others do not. This squandering of talent translates into reduced economic output and a smaller pool of problem solvers. The net opens the gates education to anyone with a computer. A motivated teen anywhere on the planet can walk through the world’s knowledge -- from the webs of Wikipedia to the curriculum of MIT’s OpenCourseWare. The new human capital will serve us well when we confront existential threats we’ve never imagined before.

Energy expenditure is reduced

Societal collapse can often be understood in terms of an energy budget: when energy spend outweighs energy return, collapse ensues. This has taken the form of deforestation or soil erosion; currently, the worry involves fossil-fuel depletion. The internet addresses the energy problem with a natural ease. Consider the massive energy savings inherent in the shift from paper to electrons -- as seen in the transition from the post to email. Ecommerce reduces the need to drive long distances to purchase products. Delivery trucks are more eco-friendly than individuals driving around, not least because of tight packaging and optimisation algorithms for driving routes. Of course, there are energy costs to the banks of computers that underpin the internet -- but these costs are less than the wood, coal and oil that would be expended for the same quantity of information flow.

The tangle of events that triggers societal collapse can be complex, and there are several threats the net does not address. But vast, networked communication can be an antidote to several of the most deadly diseases threatening civilization. The next time your coworker laments internet addiction, the banality of tweeting or the decline of face-to-face conversation, you may want to suggest that the net may just be the technology that saves us.

### 1NC---CT---Debris Good

#### Debris creates a deterrence---solves conflict.

Gregory Miller, 21 (Gregory Miller holds a Ph.D. in Political Science from The Ohio State University and is a Professor and Chair of the Department of Spacepower and Director of the Schriever Space Scholars program at the Air Command and Staff College, November 2021, accessed on 6-24-2022, Space Policy, Vol 58, “Deterrence by Debris: The Downside to Cleaning up Space”, <https://www.sciencedirect.com/science/article/abs/pii/S0265964621000394#:~:text=An%20unintended%20consequence%20of%20debris,hostile%20actions%20against%20orbital%20objects>., HBisevac)

The danger of kinetic strikes increasing orbital debris is a common theme in the literature, but the **positive deterrent** **effects** of some debris are often **overlooked**. The debris resulting from destroyed satellites, or other space objects, creates a **deterrent effect** on actors who might otherwise **violate** international norms and **strike** at **objects in space**, either to test their capabilities or as an act of hostilities. This is not deterrence in the traditional sense, of one actor publicly threatening punishment in response to another actor’s unwanted actions. It is not deterrence by denial since the attacker is not damaged and may even achieve its objective. Nor is it deterrence by punishment because the debris itself does not threaten to punish the attacker’s country. But debris can **increase** the **future costs** to the aggressor, even if their initial attack **succeeds**, and thus it has a similar **restraining effect** on certain behavior. Like the automated response of the U.S. tripwire in West Germany, the threat that debris can pose to state interests acts as a form of deterrence, at least to prevent some actors from taking certain types of actions. Removing the danger of debris will **weaken** that restraint and thus **weaken deterrence**, making **ASAT** **tests** and **hostile actions** in space **more likely**. Several factors may deter a state from launching kinetic tests or striking against an adversary’s interests in space. For one thing, if a state’s adversary has similar capabilities to destroy objects in space, deterrence would be a function of not wanting to escalate tensions. Although international law only explicitly prohibits states from placing weapons of mass destruction in orbit, international space law, like the Outer Space Treaty [30], does provide a framework for addressing the activities of one state that lead to the damage of another state’s property. Likewise, there are international norms (informal but expected rules of behavior) against the weaponization of space. But these norms seem to be in decline [31], and such norms only deter a state from engaging in certain types of behavior if the state cares about following norms, if it cares about how states perceive its behavior, or if it believes other states are willing to enforce the norms. The **beauty** of debris as a deterrent is that it **does not rely** on the **enforcement** of norms or the credibility of states to succeed.

### 2NC---CT---Debris Good

#### Solving debris undermines deterrence AND debris now doesn’t cause damages to assets.

Gregory Miller, 21 (Gregory Miller holds a Ph.D. in Political Science from The Ohio State University and is a Professor and Chair of the Department of Spacepower and Director of the Schriever Space Scholars program at the Air Command and Staff College, November 2021, accessed on 6-24-2022, Space Policy, Vol 58, “Deterrence by Debris: The Downside to Cleaning up Space”, <https://www.sciencedirect.com/science/article/abs/pii/S0265964621000394#:~:text=An%20unintended%20consequence%20of%20debris,hostile%20actions%20against%20orbital%20objects>., HBisevac)

Some potential solutions to the debris problem will be faster and more effective than others. The **irony** is that more efficient solutions to the debris problem will more **heavily weaken** the effect that debris has to **deter tests** and attacks on space assets. If someone develops the ability to quickly and efficiently remove debris once it is created, then states will have **fewer disincentives** against using **kinetic weapons** in space, such as antisatellite ballistic missiles, or to **activate** some of the alleged **hunter-killer** **satellites** already in space [41,42]. In effect, the current difficulty cleaning up space is a factor that **strengthens deterrence** because it **constrains** certain states from engaging in **hostile activities**, who otherwise might do so **absent** the **threat** to their **own interests**. There is an **optimal amount** of debris that poses **enough of a threat** that it continues to deter kinetic hostilities while posing a **small enough threat** to **existing orbital objects** that it does not **dramatically hinder** global space activities. The challenge is identifying that optimal amount, which will be different for each orbit and the actor needing to be deterred.

## Topicality

### 1NC---T-DoD

#### “Security cooperation” requires the DOD.

Quinn ’19 [Major Jason A. Quinn; 2019; Judge Advocate in the United States Army; the Military Law Review, “Other Security Forces Too: Traditional Combatant Commander Activities Between U.S. Special Operations Forces and Foreign Non-Military Forces,” vol. 227]

Under this definition, “security sector assistance” includes the relevant policies, programs, or activities of any executive agency. Complicating matters, though, Congress has considered a proposed definition for “security sector assistance” that, in contrast to the presidential policy definition,130 encompasses DoS programs, but not DoD or other executive agency programs.131 In addition, Congress has defined “security cooperation” as DoD specific,132 but it has not defined “security assistance.”

The DoD adheres to the presidential policy definition and further defines “security cooperation” as all its relationship building and foreign partner development activities, including “security assistance,” which the DoD defines as a subset of security cooperation that is funded and authorized by the DoS and administered by the Defense Security Cooperation Agency.133 The DoS, on the other hand, uses the term “security assistance” in a manner that contradicts the DoD's definition, employing it to describe any DoS or DoD assistance to foreign military or other security forces.134

#### Violation---The AFF isn’t.

**USC, 19** (USC, 1-14-2019, accessed on 6-24-2022, United States Code, 2018 Edition, Title 43 - PUBLIC LANDS, "[USC02] 43 USC Ch. 46: GEOSPATIAL DATA", https://uscode.house.gov/view.xhtml?hl=false&edition=prelim&path=%2Fprelim%40title43%2Fchapter46&req=granuleid%3AUSC-2019-title43-chapter46&num=0&saved=L3ByZWxpbUB0aXRsZTQzL2NoYXB0ZXI0Ng%3D%3D%7CZ3JhbnVsZWlkOlVTQy1wcmVsaW0tdGl0bGU0My1jaGFwdGVyNDY%3D%7C%7C%7C0%7Cfalse%7Cprelim, HBisevac)

In this chapter—

(1) the term "Advisory Committee" means the National Geospatial Advisory Committee established under section 2803(a) of this title;

(2) the term "Committee" means the Federal Geographic Data Committee established under section 2802(a) of this title;

(3) the term "**covered agency**"—

(A) means—

(i) an **Executive department**, as defined in section 101 of title 5 that collects, produces, acquires, maintains, distributes, uses, or preserves geospatial data on paper or in electronic form to fulfill the mission of the Executive department, either directly or through a relationship with another organization, including a State, local government, Indian tribe, institution of higher education, business partner or contractor of the Federal Government, and the public;

(ii) the **N**ational **A**eronautics and **S**pace **A**dministration; or

(iii) the **G**eneral **S**ervices **A**dministration; and

(B) does not include the Department of Defense (including 30 components and agencies performing national missions) or any element of the intelligence community;

#### Vote NEG for limits and ground---infinite actors on an already AFF-biased topic makes debate impossible---only a stable topic mechanism ensures link uniqueness and a predictable basis for prep.

## Counterplans

### 1NC---ADV CP---Solar Storms

#### ---Increase investment in solar shield technology and solar storm prediction tech.

#### Solves solar storms.

Tony Phillips, 10 (Dr. Tony Phillips is a professional astronomer and science writer and received his PhD from Cornell, 10-26-2010, accessed on 6-25-2022, NASA, “Solar Shield--Protecting the North American Power Grid”, https://science.nasa.gov/science-news/science-at-nasa/2010/26oct\_solarshield, HBisevac)

That is why a node-by-node forecast of geomagnetic currents is potentially so **valuable**. During extreme storms, engineers could **safeguard** the most endangered transformers by **disconnecting them** from the grid. That itself could cause a blackout, but only temporarily. Transformers protected in this way would be **available** again for **normal operations** when the storm is over.

The innovation of Solar Shield is its ability to deliver **transformer-level predictions**. Pulkkinen explains how it works:

"Solar Shield springs into **action** when we see a **c**oronal **m**ass **e**jection (CME) billowing away from the sun. Images from SOHO and NASA's twin STEREO spacecraft show us the cloud from as many as **three points of view**, allowing us to make a **3D model** of the CME, and predict **when** it will **arrive**."

While the CME is **crossing** the sun-Earth divide, a trip that typically takes 24 to 48 hours, the Solar Shield team prepares to **calculate ground currents**. "We work at Goddard's Community Coordinated Modeling Center (CCMC)," says Pulkkinen. The CCMC is a place where leading researchers from around the world have gathered their **best physics**-**based computer programs** for modeling space weather events. The crucial moment comes about 30 minutes before impact when the cloud sweeps past **ACE**, a spacecraft stationed 1.5 million km upstream from Earth. Sensors onboard ACE make in situ measurements of the CME's **speed**, **density**, and **magnetic field**. These data are transmitted to **Earth** and the waiting **Solar Shield** team.

"We quickly feed the data into **CCMC computers**," says Pulkkinen. "Our models **predict fields** and **currents** in Earth's upper atmosphere and **propagate** these **currents** down to the **ground**." With less than 30 minutes to go, Solar Shield can **issue an alert** to utilities with detailed information about GICs.

### 1NC---ADV CP---Kessler

#### ---implement orbital use fees

#### Solves Kessler.

Karin Vergoth, 20 (Karin Vergoth, CIRES-NOAA Science Writer at U-C Boulder and NOAA, 5-26-2020, accessed on 6-25-2022, University of Colorado Boulder, “Solving the space junk problem”, <https://www.colorado.edu/today/2020/05/26/solving-space-junk-problem>, HBisevac)

Space is getting crowded. Aging satellites and space debris crowd low-Earth orbit, and launching new satellites **adds** to the **collision risk**. The most **effective way** to solve the space junk problem, according to a new study, is not to capture debris or deorbit old satellites: it’s an international agreement to charge operators “**orbital**-**use fees**” for **every satellite** put into orbit.

Orbital use fees would also increase the **long**-**run value** of the space industry, said economist Matthew Burgess, a CIRES Fellow and co-author of the new paper. By reducing future **satellite** and **debris collision** risk, an annual fee rising to about $235,000 per satellite would quadruple the value of the satellite industry by 2040, he and his colleagues concluded in a paper published today in the Proceedings of the National Academy of Sciences.

“Space is a common resource, but companies aren’t accounting for the cost their satellites impose on other operators when they decide whether or not to launch,” said Burgess, who is also an assistant professor in environmental studies and an affiliated faculty member in economics at CU Boulder. “We need a policy that lets satellite operators directly factor in the costs their launches impose on other operators.”

Currently, an estimated 20,000 objects—including satellites and space debris—are crowding low-Earth orbit. It’s the latest tragedy of the commons, the researchers said: Each operator launches more and more satellites until their private collision risk equals the value of the orbiting satellite.

So far, proposed solutions have been primarily technological or managerial, said Akhil Rao, assistant professor of economics at Middlebury College and the paper’s lead author. Technological fixes include removing space debris from orbit with nets, harpoons, or lasers. Deorbiting a satellite at the end of its life is a managerial fix.

Ultimately, engineering or **managerial solutions** like these **won’t solve** the debris problem because they **don’t change** the **incentives** for operators. For example, removing space debris might motivate operators to **launch** **more** satellites—further crowding **l**ow-**E**arth **o**rbit, **increasing collision risk**, and raising costs.

“This is an **incentive problem** more than an **engineering problem**. What’s key is getting the **incentives right**,” Rao said.

A better approach to the space debris problem, Rao and his colleagues found, is to implement an orbital-use fee—a **tax** on **orbiting satellites**.

“That’s not the same as a launch fee,” Rao said, “Launch fees by themselves can’t induce operators to deorbit their satellites when necessary, and it's not the launch but the orbiting satellite that causes the damage.”

Orbital-use fees could be straight-up fees or tradeable permits, and they could also be orbit-specific, since satellites in different orbits produce varying collision risks. Most important, the fee for each satellite would be **calculated** to **reflect** the **cost** to the industry of putting another satellite into orbit, including **projected current** and **future costs** of **additional collision risk** and **space debris production**—costs operators don’t currently factor into their launches.

“In our model, what matters is that satellite operators are **paying the cost** of the **collision risk** imposed on **other operators**,” said Daniel Kaffine, professor of economics and RASEI Fellow at CU Boulder and co-author on the paper.

And those fees would increase over time, to account for the rising value of cleaner orbits. In the researchers’ model, the optimal fee would rise at a rate of 14 percent per year, reaching roughly $235,000 per satellite-year by 2040.

For an orbital-use fee approach to work, the researchers found, all countries launching satellites would need to participate—that's about a dozen that launch satellites on their own launch vehicles and more than 30 that own satellites. In addition, each country would need to charge the same fee per unit of collision risk for each satellite that goes into orbit, although each country could collect revenue separately. Countries use similar approaches already in carbon taxes and fisheries management.

In this study, Rao and his colleagues compared orbital-use fees to **business as usual** (that is, open access to space) and to technological fixes such as removing space debris. They found that orbital use fees **forced operators** to directly **weigh** the **expected lifetime value** of their satellites against the **cost** to industry of **putting another satellite** into **orbit** and creating **additional risk**. In other scenarios, operators still had incentive to race into space, hoping to extract some value before it got too crowded.

With orbital-use fees, the long-run value of the satellite industry would increase from around $600 billion under the business-as-usual scenario to around $3 trillion, researchers found. The increase in value comes from reducing collisions and collision-related costs, such as launching replacement satellites.

Orbital-use fees could also help satellite operators get **ahead** of the **space junk problem**. “In other sectors, addressing the tragedy of the commons has often been a game of catch-up with substantial social costs. But the relatively young space industry can **avoid** these **costs** before they **escalate**,” Burgess said.

### 1NC---ADV CP---Non-Kinetic Attacks

---should nominate a NCA (National Cyber Advisor); set international information and communications technology standards; announce and abide by a policy of no first use and encourage other nuclear states to adopt no first use; not retaliate to cyberattacks; and share information with private actors;

#### Solves non-kinetic attacks.

Farshchi and Ravich 21 (Jamil Farshchi is the Chief Information Security Officer of Equifax. Samantha F. Ravich, Ph.D., serves as a Chair of the Foundation for Defense of Democracies Center on Cyber and Technology Innovation and is a Commissioner of the U.S. Cyberspace Solarium Commission. She previously served as Deputy National Security Advisor, 1-22-2021, "The next pandemic may be cyber — How Biden administration can stop it," TheHill, <https://thehill.com/opinion/cybersecurity/535364-the-next-pandemic-may-be-cyber-how-biden-administration-can-stop-it>)

As two experts who have witnessed the cascading impacts of crises from the front lines of industry and government, we know the importance of cyber defense and the impact that a major event could have on our country. That’s why we're calling on [President Biden](https://thehill.com/people/joe-biden) to mitigate the looming cyber threat in the first 100 days of his administration. Here’s how: First, the president should nominate a National Cyber Director and begin staffing the office to bring together the full resources of the federal government and the private sector around a united cybersecurity strategy. A whole-of-nation approach to cybersecurity is required to deter our adversaries and strengthen our homeland — and American businesses must be a key partner in this fight. The private sector has a tremendous amount of knowledge and capabilities to bring to the table, which is why the National Cyber Director must engage deeply with the business community on how to protect American companies, accelerate intelligence sharing, and leverage new technologies to strengthen our cybersecurity posture. Bolstering direct collaboration between the White House and business leaders on cyber matters is how we build better resiliency and defend against our adversaries with greater speed and agility. Second, the new administration must make it a priority to lead the way in setting new international information and communications technology standards. Much of today’s fragmented standards place an unnecessary burden on American businesses — stifling issue response and reducing real transparency for consumers. Compared to other countries, the United States is not participating as much or as effectively in global forums where these types of international standards are set. As Sen. [Mark Warner](https://thehill.com/people/mark-warner) (D-Va.) recently said, “We used to [flood the zone](https://www.wsj.com/articles/lawmakers-urge-next-administration-to-focus-on-cybersecurity-11603877402) at all these technical conferences. We are not doing that anymore.” But other countries like [Russia and China](https://foreignpolicy.com/2019/09/16/russia-and-china-are-trying-to-set-the-u-n-s-rules-on-cybercrime/) are. American interests and security are strengthened when international standards are developed and set with active U.S. participation. Third, the new administration should work quickly with Congress to establish a Joint Collaborative Environment, a mechanism by which the federal government can share with the private sector classified and unclassified cyber threat information, insights, and other relevant data — to the greatest extent possible. Today’s aged and fragmented approach to intelligence sharing must change. When it comes to winning in cyberspace, speed matters, collaboration matters, and communication matters. The private sector needs faster access to intel to preempt cyber threats, fast-twitch engagement to mitigate attacks in the heat of the battle, and stronger, ongoing communication with partners from government to collectively elevate our defenses. Through this common environment, we can build a coordinated public-private approach to cybersecurity. Fourth, the president must address the security of our technology and communications supply chain as a result of SolarWinds breach. As Sen. [Ben Sasse](https://thehill.com/people/benjamin-ben-sasse) (R-Neb.) [recently said](https://omaha.com/news/local/govt-and-politics/russian-hack-puts-a-spotlight-on-sasses-cyber-warfare-planning-push/article_21985a58-4156-11eb-a4e2-e344cc20852d.html), “There’s just a hard truth that we’re decades behind where we need to be for cyber.” The grim reality is that there are a countless number of third-party vendors just like SolarWinds who have the data, access, and trust of American businesses and countless government institutions. That’s exactly why the U.S. government needs to take immediate steps to build a [trusted supply chain](https://www.solarium.gov/public-communications/supply-chain-white-paper), which include activating a lead agency to support supply chain risk efforts; mapping how and where key vendors are used in our digital infrastructure; and accelerating better intelligence sharing, risk assessments, and product testing. As we’ve seen, the consequences of failing to protect our technology and communications supply chain has far reaching implications.

### 1NC---ADV CP---Miscalc

#### ---Establish a statutory No First Use with China and Russia.

#### A statutory NFU is key to prevent crisis escalation from ambiguity

Blair, 18 (Bruce Blair, nuclear security expert and a research scholar at the Program on Science and Global Security at Princeton and the co-founder of Global Zero, Strengthening Checks on Presidential Nuclear Launch Authority, January/February 2018, Arms Control Today, <https://www.armscontrol.org/act/2018-01/features/strengthening-checks-presidential-nuclear-launch-authority>)

U.S. nuclear launch protocol has important virtues and serious liabilities. Major changes are needed to constrain a president who would seek to initiate the first use of nuclear weapons without apparent cause and to prevent him or her from being pushed into making nuclear retaliatory decisions in haste.

The virtues of the protocol—the procedures and timelines for ordering the use of nuclear weapons and for carrying out such an order—are twofold. First, it concentrates launch authority at the highest level of the executive branch, the presidency, taking it out of the hands of the military and others. This is a function of paramount importance. The principle of civilian control over weapons of mass destruction must never be compromised. Together with the imposition of organizational and technical safeguards on the weapons and their handlers, the protocol elevates the locus of launch capability, as well as of launch authority, to the highest practical level.1

Second, it is designed to allow the president and the nuclear forces under his command to respond rapidly and decisively in the face of an enemy attack by nuclear-armed missiles that can fly from the opposite side of the planet to U.S. territory in 30 minutes or from forward-deployed submarines in 15 minutes.2 This is of critical importance in view of the acute vulnerability of U.S. nuclear command, control, and communications, as well as of a large portion of the U.S. strategic nuclear arsenal, particularly the silo-based missile force and the bomber fleet in its normal peacetime posture.3

Despite fast-flying inbound warheads, the protocol on paper provides enough time for detecting and assessing an attack, convening an emergency conference between the president and his top nuclear advisers, briefing the president on his options and their consequences, authenticating the president’s decision, and formatting and transmitting a launch order to the launch crews in time to ensure the survival and execution of their forces.

The flip side of these virtues are serious liabilities. The protocol concentrates authority and emphasizes speed to such a degree that it may allow a president to railroad the nuclear commanders into initiating a first strike without apparent cause and quickly executing an order that may be horrifyingly misguided, illegal, or both. A demented commander-in-chief could start a nuclear conflagration that no one could forestall, veto, or stop.

Equally deleterious, a president can become hostage to the protocol itself, like a conductor on a runaway train, if an enemy nuclear strike appears underway. He may be pushed into hastily ordering “retaliation” in response to a false alarm. Rationality would be lost in the fog of crisis under a short deadline fraught with confusion and emotion.

Protocol for Intentional First Use

If the president wishes to order the first use of nuclear weapons, he would be expected to do so in close consultation with his top national security advisers, particularly the secretaries of defense and state (statutory advisers on the National Security Council), the chairman of the Joint Chiefs of Staff, the national security adviser, and the senior generals who command the military forces. Depending on the urgency of the situation, this could be a protracted process with extensive planning, heightened force readiness, and regular briefings of the president, or it could be truncated to minutes if an imminent attack is perceived.

When a decision is imminent, the process goes critical. The commander-in-chief would be connected to his key advisers via a secure communications network designed to support nuclear emergency actions. The president could initiate this conference anytime, even abruptly in the night, through his military aide who is always nearby with the “football”—a satchel containing the nuclear war plans, including a one-pager graphically depicting the major options at his disposal.

The best location for conferencing would be the blast-resistant emergency operations center under the East Wing of the White House. Advisers could be assembled there, and others linked by secure phone. Such a conference could be convened almost anywhere, from Mar-a-Lago or other locations or aboard his ground-transport vehicles and dedicated aircraft, including Air Force One and his “doomsday” plane.4 Secure communications are far less reliable when the president is traveling or in the process of being evacuated to a safe location. The advisers may or may not join the conference in a timely way. If a brewing crisis suddenly escalates and catches them off guard, key advisers may fail to get on the call before a president decides the time to strike has arrived. During nuclear release exercises and real-world incidents involving North Korea and other nations over the past decade, missile launch preparations or actual firings posing a potential threat triggered emergency conferences, but notification often failed to reach key advisers in time. Sometimes none of the advisers checked in, leaving the president and the head of Strategic Command (StratCom), whose role is to brief the president on nuclear options and their consequences, alone in the hot seats.5 After this briefing, the president may seek advice from any, all, or none of the advisers in the room or on the telephone before rendering a decision, which likely but not necessarily involves choosing a preprogrammed option.6 Formally, he does not need any approval or consent, although StratCom or others on the call could attempt to dissuade the president if his thinking or final decision veer into the realm of the obviously misguided or illegal.7 Even the defense secretary has no particular role other than offering advice if asked. Contrary to widespread belief, he does not confirm the order or otherwise bless it in any way. But this is their last chance to change the president’s mind before a formal launch order is prepared by the Pentagon, disseminated, and inexorably implemented. Listening in on the exchange is the Pentagon war room, a kind of boutique service dedicated to executing the orders of the president and the defense secretary.8 Following the drift of the conversation, this entity would start preparing a launch order. When the president finally declares his choice of option, it would challenge the president to authenticate using a special code known as the “biscuit,” or Gold Code. This would take a few seconds. If the codes match properly, it would quickly format and transmit a launch order over multiple communications channels directly to the submarine, bomber, and underground launch crews. This would take a couple of minutes. Shorter than the length of a “tweet,” the order would specify the war plan, the time to begin the strike, an unlock code needed by the firing crews to release their weapons, and a Sealed Authentication Code that must match the codes in the firing crews’ safe. If the codes match, the crews assume the order originated with the president, even though all the codes in the launch order are held exclusively by the Pentagon war room and alternate command centers such as StratCom itself. The underground Minuteman crews could complete their launch checklist in a little more than a minute. Today, as many as 400 missiles could be launched from their underground silos in less than five minutes after the president gave the order.9 Submarines and bombers would be the primary attackers in a scenario involving North Korea. With two boats typically on launch-ready patrol in the Pacific Ocean, the sub force would be capable of quickly firing about 200 warheads roughly 15 minutes after the president gave the order.10 If the order came without a prior raising of alert readiness, however, the boats would surface to confirm its validity. Bombers on full alert with bombs and cruise missiles loaded,11 as they would be in times of heightened tension, would need eight hours or so to fly from their U.S. bases to near the border of their target countries, where they would fire cruise missiles at inland targets or proceed to fly into enemy airspace to drop gravity bombs. They could deliver upward of 500 weapons. Protocol for Second-Strike Scenarios A decision to strike back in retaliation theoretically could be drawn out for days and weeks, but the protocol is designed to yield one in minutes. The basic procedures are the same for first and second use of nuclear weapons, but the timelines shrink in the latter case. Reactions from the bottom to the top of the chain of command to an apparent attack are driven by checklists and virtually preordained. The action could be described as a rote enactment of a prepared script with very high expectations in all quarters that a nuclear response would be authorized immediately. Historically, the notion of riding out an attack has been operationally anathema to the military. As General Lee Butler, a former head of the strategic forces, stated, “Our policy was premised on being able to accept the first wave of attacks…. Yet at the operational level it was never accepted…. They built a construct that powerfully biased the president’s decision process toward launch before the arrival of the first enemy warhead…a move in practice to a system structured to drive the president invariably toward a decision to launch under attack.”12 This is called “jamming” the president, or pressuring him to quickly authorize retaliation while under apparent or confirmed attack.13 Jamming is still the norm in current nuclear operations. Although President Barack Obama directed the Pentagon to reduce our reliance on launch on warning and find ways to increase warning and decision time, nuclear exercises still feature this high-pressure tactic. In some high-threat situations, the StratCom commander’s briefing of the president may be compressed to as little as 30 seconds, and then the president may be pressed to “deliberate and decide” in six minutes or less. The persistent vulnerability of the nuclear command system and hundreds of U.S. missiles requires extremely fast reaction at all levels. In truth, everyone gets jammed. The risk of mistaken launch on false warning remains significant even today, 25 years after the end of the Cold War. It also creates pressure to pre-empt an imminent attack. To relieve the jamming pressure today, the protocol must start earlier and under conditions of greater uncertainty about the degree of threat posed by missile launch preparations or actual firings. During the Cold War, even the really close calls did not rise to the level of presidential notification.14 Today, there are more missile launches than ever to track, and assessing whether they pose a threat has become more difficult.15 Ironically this surge, which has happened over the past decade or so, has spawned great unpredictability, complicated assessment, and led on multiple occasions to presidents being notified of an ambiguous imminent threat in progress.16

Reforms: Toward a True Retaliatory Posture

A six-minute deadline for deliberation and decision is ridiculous. The president needs much more warning and decision time to rationally cope with indications of a nuclear attack on the United States or its allies. He must no longer be jammed to authorize what could be a civilization-ending response to attack indications that may be false. The risks of miscalculation and irrational decision-making leading to incoherent operations and further escalation are unacceptably high.

This terrifying reality has been ignored for decades. Reform is long overdue.

This means that the current prompt-launch posture must be drastically altered. Use-or-lose forces such as the silo-based missile force should be eliminated. Launch on warning should be eliminated. Reducing the vulnerability of command, control, and communications to kinetic attack and cyberattack should be the top priority of the nuclear modernization plan, even if it means cutting spending on replacement forces in the pipeline. The submarine force has already become the premier leg of the strategic triad, the central component of U.S. deterrence policy. This force can patiently wait for months for direction from higher authority.

Equally overdue is the adoption of a policy that eschews the first use of nuclear weapons. A clear marker would be established in limiting the president’s leeway to initiate a first strike.17 If taken seriously, the operational plans would also be modified in ways that would hamstring any effort to order the use of nuclear weapons without apparent cause.

Congress has considerable legal standing to pass legislation that prohibits first use. A recent bill introduced by Representative Adam Smith (D-Wash.) is a step in this direction,18 but a law would draw real redlines around the policy. Crossing them would make the president accountable and even impeachable.

The Trump administration appears to be heading in the opposite direction. Its nuclear review in the works is leaning toward the deployment of smaller-yield nuclear weapons (e.g., a primary-only warhead on Trident missiles) that will make them more usable in both first- and second-use scenarios. It is also leaning toward widening the conditions under which nuclear weapons may be used first in response to non-nuclear strategic aggression and toward revoking Obama-era assurances given to non-nuclear countries that the United States would never attack them with nuclear weapons.

### 1NC---ADV CP---SSA

#### ---ensure open sourcing of all space situational awareness data.

#### Data-sharing with allies solves the aff

Loverro 14 – Deputy Assistant Secretary of Defense for Space Policy, Department of Defense, Douglas L., 3/12. “STATEMENT OF MR. DOUGLAS L. LOVERRO DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR SPACE POLICY BEFORE THE SENATE COMMITTEE ON ARMED SERVICES SUBCOMMITTEE ON STRATEGIC FORCES.” https://www.armed-services.senate.gov/download/loverro\_03-12-14

Our efforts here go beyond mere words – they are backed by actions. As I have discussed before, a key aspect of improving spaceflight safety, and assuring we can monitor the space environment more closely, is our space situational awareness (SSA) capabilities. We have been working on this for some time, and I am happy to report that we have made some real progress over the last year. That progress comes in two forms – new sensors and information sharing agreements.

On the sensor front, we have remained on a constant path for the last several years to reposition sensors where they can do the most good and to invest in new sensors where needed. Last year we reported that we had entered into an agreement with Australia to relocate and repurpose a launch tracking radar, the C-Band radar, from Antigua to western Australia to aid in our ability to monitor activities at low altitude in the southern hemisphere. That work is now underway. We complemented that effort with a second agreement signed with Australia this past November to relocate the DARPA-developed Space Surveillance Telescope to western Australia to give us an unmatched ability to track deep space objects in that critical region of the world. Additionally, after years of focused effort, and a sequestration-imposed six-month delay, we will soon award the contract for the first Space Fence site. The Space Fence will provide an unprecedented ability to track an order-of-magnitude greater number of objects in low earth orbit, supporting long-term spaceflight safety.

The Department has also made great strides in more transparently sharing SSA information with other space operators. Over the past year, U.S. Strategic Command (USSTRATCOM) has continued to pursue SSA sharing agreements with commercial companies and foreign governments, consistent with existing legislative authority. This year, USSTRATCOM signed five agreements with other governments – Australia, Japan, Italy, Canada, and France – and increased to forty-one our agreements with commercial satellite operators. Many more agreements are in varying stages of negotiation. We are committed to providing SSA services to enhance spaceflight safety for all.

While the purpose of these agreements is to allow us to share more advanced space flight safety products with other space-faring nations, they really serve to lay the groundwork for the next stage of effort – two-way data sharing. The space environment is too big and too complex for a single nation to bear the entire cost of monitoring it. Cost-effective SSA requires cooperation among space actors. The increasingly congested space environment means that an unparalleled level of information sharing is needed to promote safe and responsible operations in space and to reduce the likelihood of mishaps, misperceptions, and mistrust. We are currently engaged in detailed technical discussions with several nations that have space situational awareness capabilities to explore opportunities for two-way information exchange. This type of sharing will increase SSA information available to the United States while limiting unnecessary duplication of SSA capabilities. In short, we save money and improve safety for us and our allies.

### 2NC---DoS CP---Solvency

#### DoS can solve the AFF.

Georgetown Law, 20 (Georgetown University Law, 10-8-2020, accessed on 6-24-2022, “Other U.S. Government Agencies Involved in Space Policy & Regulation”, <https://guides.ll.georgetown.edu/c.php?g=1037047&p=7762102>, HBisevac)

In addition to the NASA, which is responsible for the U.S. civilian space program and for aeronautical and space-related research, many other U.S. federal agencies are involved in the development of space policy and in the regulation of space-related activities. Listed below are links to the websites of selected federal agencies that play a significant role in formulating and implementing U.S. space policy, particularly as it relates to national security and to the emerging commercial space industry. U.S. Department of Commerce The Commerce Department helps to promote economic growth by gathering economic and demographic data to facilitate decision making by government agencies and private industry, and by helping to establish uniform scientific and industrial standards. National Oceanic and Atmospheric Administration NOAA is a scientific agency within the Department of Commerce. [Office of Space Commerce](https://www.space.commerce.gov/) This NOAA office coordinates the development of [commercial space policy](https://www.space.commerce.gov/policy/noaa-commercial-space-policy/) within the Department of Commerce.  Its mission is to facilitate the development of emerging space-related industries. [National Environmental Satellite, Data, and Information Service](https://www.nesdis.noaa.gov/) The NESDIS manages data and information collected by meteorological satellites. [Commercial Remote Sensing Regulatory Affairs](https://www.nesdis.noaa.gov/CRSRA/licenseHome.html) The CRSRA licenses the commercial use of remote sensing satellite technologies, which collect images of the Earth's surface and related data, by individuals and entities who are subject to the jurisdiction of the U.S. [National Telecommunications and Information Administration](https://www.ntia.doc.gov/) The NTIA is a scientific agency within the Department of Commerce.  Along with the [Federal Communications Commission (FCC)](https://www.fcc.gov/engineering-technology/policy-and-rules-division/general/radio-spectrum-allocation), an independent agency, the NTIA is jointly responsible for allocating the [radio spectrum](https://www.ntia.doc.gov/category/spectrum-management) used by telecommunications satellites operated by the federal government and by private industry.  U.S. Department of Defense The Defense Department coordinates U.S. national security policy and overseas all branches of the U.S. armed forces. [Assistant Secretary of Defense for Homeland Defense and Global Security](https://policy.defense.gov/OUSDP-Offices/ASD-for-Homeland-Defense-Global-Security/) The ASD is responsible for formulating [national security strategy for outer space](https://policy.defense.gov/OUSDP-Offices/ASD-for-Homeland-Defense-Global-Security/Space-Policy/), among other matters. [U.S. Space Force](https://www.spaceforce.mil/) The newest branch of the U.S. armed forces was established on December 19, 2019, with the signing of the U.S. Space Forces Act, part of the [Defense Authorization Act of 2020](https://www.congress.gov/bill/116th-congress/senate-bill/1790).  It is organized as a military service branch within the Department of the Air Force and is directed by the Chief of Space Operations. U.S. **D**epartment **o**f **S**tate The State Department is responsible for U.S. foreign policy and international relations. Office of **Emerging Security Challenges** This office works **cooperatively** with **U.S. allies** on issues of **space security** and missile defense. Office of Space and Advanced Technology This office helps to formulates policy on a **wide range** of topics, including **space diplomacy**, the commercial development of space resources, and the regulation of artificial **satellites**, satellite navigation systems, and satellite-based earth observation systems.

### 1NC---Inducements CP---Shell

**The United States federal government should**

**---financially induce NATO to increase space-based strategic assets;**

**---implement fiscal responsibility reforms.**

#### That solves.

Muhammed Kabir, 19 (Muhammed Kabir, Lecturer in the Department of Political Science at Queens College, Ph.D. in Political Science from the City University of New York Graduate Center, 6-7-2019, accessed on 6-25-2022, Journal of Asian Security and International Affairs, vol. 6, no. 2, “The Role of Side Payments in the Formation of Asymmetric Alliances: Forging the US–Pakistan Alliance”, <https://journals.sagepub.com/doi/10.1177/2347797019842430>, HBisevac)

The central argument of the article is that when prospective allies have diverg**ing** interests, side payments facilitate the form**ation** of an asymmetric alliance. Side payments **compensate** the **weaker state** for its **concessions** to the great power. Morrow’s (1991) model posits that asymmetric alliances provide different benefits to the parties involved—autonomy to the great power and security to the minor power.4 In exchange for security from the great power, the weaker side can offer concessions, such as military bases or the coordination of foreign and domestic policies that can increase a stronger ally’s freedom of action. States judge the attractiveness of an alliance by comparing the benefits of the ally’s ability to advance its interests with the costs of advancing the ally’s interests. When the **benefit** **exceeds** the **cost** for both states, they will form an alliance. This formulation, however, does not shed light on the extent of security benefits for the weaker side when the prospective allies have significant diverging interests. Indeed, the net value of an alliance decreases when parties have diverged interests (Morgenthau, 1973; Scarborough & Bueno de Mesquita, 1988; Snyder, 1997). I contend that in many cases, the **security**–**autonomy trade-off** alone leaves a deficit in the weaker state’s expected net gains from the alliance. The deficit, which is often a function of diverging interests between prospective allies, can be filled in through side payments that **facilitate** the **successful completion** of an alliance agreement.

The use of side payments in interstate negotiations is well-known. According to bargaining theories, policymakers use side payments as either direct monetary payments (such as bribes) or material concessions on other issues (such as issue linkages) to **encourage concessions** on a given issue (Freeman, 1993; Poast, 2012; Tollison & Willett, 1979). Side payments and issue linkages, if used to provide a positive inducement, help states to diminish conflict and to reach an otherwise unattainable level of cooperation during negotiations (Aggarwal, 1998; Oye, 1993). Parties can gain from the use of side payments and issue linkages and are able to reach **mutual** agree**ments** when they have differential value for two issues (Davis, 2004; Wagner, 1988). For the wealthier state, the military value of the alliance and the anticipated gains in foreign policy objectives justify the cost of side payments (Skålnes, 2000). For a weaker state, side payments offer a positive inducement and a potential source of external resources that could help leaders to **ameliorate** the **dilemma** in **domestic resource distribution**.

In the **absence** of a shared threat or a **common objective**, great powers and weaker states are likely to have different foreign policy priorities. They may seek external allies for different reasons. Great powers have **extensive** **fo**reign **po**licy **objectives** with a global scope than weaker states. They may wish to establish their spheres of influence abroad and may seek a high degree of autonomy or freedom of action in the periphery. Forming alliances in the periphery allow them to acquire such freedom of action. The geographic location of weaker states or their proximity to international conflicts sometimes makes them strategically attractive partners to great powers. Also, having the need to gain access to military bases may motivate a great power to establish security ties with weaker states. Whereas great powers may use alliances as a power projection tool, leaders in weaker states may use external alignment to enhance their hold on power. For many leaders in the Third World, regional rivalries and domestic political factors, which are sometimes intertwined (Ayoob, 1995), such as political instability, leaders/regimes’ legitimacy and their calculus for political survival play crucial roles in alignment choices. Parties, thus, sometimes attach different values to what they want to achieve from an **asymmetric alliance**.

### 2NC---Inducements CP---AT: Inducements Fail

#### Money works. The cost-benefit ratio is skewed.

Kabir 17 – Muhammad S. Kabir, submitting a Political Science PhD thesis at CUNY. [Asymmetric Alliances and Side Payments: Alliance Politics Between Unequal Powers, https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=2912&context=gc\_etds]

Having divergent interests between prospective allies increases the likelihood that great powers use side payments to form the alliance. The likelihood of using side payments by a great power to cement an alliance is a function of having divergent interests between the parties. Great powers and small states can have incentives to form alliances for different reasons, not necessarily driven by a mutual interest in deterring a common enemy. Divergent motivations for forming an alliance between great powers and small states are sometimes caused by the disparity in their power capabilities. Whereas a great power may use the alliance as a tool for power projection, a small state leader may seek an alliance with a great power to obtain external help to counter domestic and regional threats to his political survival. An alliance agreement may stipulate that the small state offers concessions (such as changes in its internal policies or granting military bases) to the great power ally. In return, the great power can offer a potential ally an increase in security through an increased amount of side payments, such as economic aid, military equipment, arms or other logistical support. The great power’s ability to influence its ally’s internal and external policies enhances its freedom of action in foreign affairs and enables it to pursue desired changes in the status quo in regional or international politics. Given that the great power is likely to be considerably wealthier than the small power, the marginal cost of sacrificing some resources (side payments) to the small power is relatively a small cost for the great power and a large gain for the small (and often poorer) state who values the marginal gain in external resources more highly. Hence, it should not be hard to find an appropriate compensation scheme since the utility gain from the side payments is large for the small power relative to the big power and so at a small utility cost to the great power a large utility deficit can be bought off for the small power when it grants a difficult policy concession.

#### Payment extracts concessions.

Kabir 17 – Muhammad S. Kabir, submitting a Political Science PhD thesis at CUNY. [Asymmetric Alliances and Side Payments: Alliance Politics Between Unequal Powers, https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=2912&context=gc\_etds]

In forming an asymmetric alliance, the autonomy-security trade-off alone cannot improve the net gain for the weaker side. Such a trade-off can generate a deficit in gain for the weaker power. The use of side payments fill the gap and make the trade-off mutually beneficial. Given that the great power is likely to be considerably wealthier than the small power, the marginal cost of sacrificing some resources (side payments) to the small power is relatively a small cost for the great power and a large gain for the small, poorer power who values the marginal gain in external resources more highly. Hence, it is possible to find an appropriate compensation scheme since the utility gain from the side payment is large for the small power relative to the big power and so at a small utility cost to the great power a deficit in utility can be bought off for the small power when it grants a difficult policy concession. Side payments, thus, provide a compensation mechanism that make an alliance agreement mutually beneficial. According to this arrangement, the small state offers concessions (such as changes in its internal policies or granting military bases that allow the projection of military forces) to the great power ally. In return, the great power can offer the leader of a potential ally an increase in security by providing side payments, such as military equipment, arms or other logistical support. This strategic trade-off enhances the great power’s freedom of action and enables it to project power in distant regions.

#### Payments reach outcomes that are otherwise unachievable.

Kabir 17 -- Muhammad S. Kabir, submitting a Political Science PhD thesis at CUNY. [Asymmetric Alliances and Side Payments: Alliance Politics Between Unequal Powers, https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=2912&context=gc\_etds]

Side Payments: Side payments are positive incentives offered by one side to the other in exchange for the recipient’s concessions on issues/policies deemed important to the donor. Foreign economic aid, military aid, and loans are clear examples of such side payments.40 Aside from these obvious examples, side payments can take various shapes or forms. For instance, during a negotiation process one party can use territorial concessions as side payments to cement an agreement. The use of positive incentives in interstate bargaining is no secret. States use foreign economic policies to influence other states’ behavior and to achieve foreign policy objectives. This is a common practice of “statecraft.”

There is a well-developed area of research on the use of side payments (of which issue linkage is a part) in the bargaining literature. According to bargaining theories, policymakers use side payments as either direct monetary payments (such as bribes) or material concessions on other issues (such as issue linages) to encourage concessions on a given issue.42 Side payments and issue linkages, if used to provide a positive inducement, help sates to diminish conflict and to reach an otherwise unattainable level of cooperation during negotiations.43 Issue linkages, as a part of side payment mechanism, help states to solve distribution problems, arise when actors have different preferences over alternative possible agreements, in bargaining situations. As Morrow observed: “a linkage deal requires two issues that the sides believe are of different importance. Each side receives concessions on the issue it believes is of greater relative importance. . . [if] done properly, both sides prefer the linkage deal to going to war over the initial issue.” 44

A state may offer various types of incentives to encourage otherwise unwilling governments to cooperate with it. Side payments may come in the form of direct payments such as cash payments (or grants), loans, or military aid, etc. Positive incentives can also be in the form of indirect payments, such as unilateral trade concessions, investments, etc. In an alliance negotiation the nature and volume of side payments, however, will depend on the strategic value of the alliance to the more powerful side.45 I contend that side payments serve as a compensation mechanism that closes the deficit in net gains sometimes felt by a member (usually, the weaker side) of the alliance. Side payments sometimes increase the scope of the alliance to include economic and/or military dimensions. For a great power considering an alliance with a small state, the strategic value of the alliance may justify the cost of side payments; for the small state gains involve both economic and strategic dimensions at the expense of concessions on issues deemed important to the great power.46 This study probes the conditions under which side payments are used as a bargaining tool in asymmetric alliances.

### 1NC---Unilat CP---Shell

#### The United States federal government should:

#### ---[ADV CP PLANKS TO SOLVE THE AFF]

#### The counterplan spurs parallel unilateral actions---solves better.

James Oberg, 10 (M.S. in Computer Science from University of New Mexico, Former NASA Contract Engineer, Chief Technologist at Soaring Hawk Productions, Former Flight Controller & Orbit Designer at United Space Alliance, 6-28-2010, accessed on 6-25-2022, NBC News, “The right and wrong stuff for space cooperation”, <https://www.nbcnews.com/id/wbna37986760#.XVwyN-hJHbE>, HBisevac)

President Barack Obama's space policy paper stresses international cooperation as a means of advancing national goals in space. But when are these **heavenly marriages** advantageous to the United States, and when might they be so **harmful** that "going it **alone**" is **preferable**?

The 14-page report, released Monday, says that spaceflight has already become multinational because of the growth of national (and commercial) players, and the wide array of teaming among these players for different activities. The report’s brief introduction ends with a “pledge of cooperation,” offered “in the belief that with strengthened international collaboration and reinvigorated U.S. leadership, all nations and peoples will find their horizons broadened, their knowledge enhanced, and their lives greatly improved.”

But these fine words collide with still-powerful international distrust, exemplified by the recent flap over China’s role as a potential partner. Last week, NASA had to deny a report that the Russians were inviting the Chinese to become players on the International Space Station, based on their expected ability to docking their own crewed spacecraft to the outpost.

That same week, widespread objections followed the announcement of China’s participation at a NASA-sponsored world conclave on coordination of each country’s space programs.

And now the White House policy paper prominently lists expansion of international cooperation as one of the **top goals** of the U.S. space program. Such cooperation has proven useful in the past. But expanding cooperation merely for the sake of cooperating, as a goal in itself rather than a means toward a goal, can become an **empty** (but potentially **costly**) **gesture**.

The goals described in the White House report appear more realistic and reassuring. The three main aims are to strengthen U.S. space leadership, identify candidate projects that would benefit from international partners, and dispel misconceptions around the world about U.S. intentions in space through greater transparency and confidence-building measures. These seem to be reasonable and valuable efforts.

Bogus promises of the past

In assessing which future projects could benefit from which candidate partners, it's useful to assess the international track record in space. Old partners such as the Europeans, Canadians and Japanese have proved their worth. They stuck to joint projects even after Washington's course changes and delays multiplied the costs and difficulties enormously.

But how about the Russians? Did they really "save" the International Space Station, or were they more trouble than they were worth? That question requires a cold-blooded calculation of costs and benefits.

The surprisingly heart-warming result is that for this project, the internationalist choice — including the Russian role — was the correct one, but for all the wrong reasons. This time, the United States was lucky. For other projects now under consideration, the "right reasons" must be understood from the beginning, and not just turn up by good fortune and dumb luck.

First of all, the Russian space alliance didn’t make the project faster or cheaper, as was promised when the alliance was forged in 1993. Experience verified what spaceflight guru Norm Augustine observed at the beginning: “I have yet to see a **joint international program** that saves any **money**.”

The costs to the U.S. side were **significant** but have rarely mentioned by NASA. In order to reach a compatible orbit to build the station, space shuttles had to steer so far northward from Florida that they lost up to a third of their cargo-carrying capacity. This required many extra flights — at well over half a billion dollars apiece — to carry hardware that could have been stowed aboard shuttles heading toward the originally planned orbit. At liftoff, it also required a more severe atmospheric climb that put added stress on the shuttle’s insulation system.

Nor are there any real signs that the Russian participation made the station particularly "better." All the revolutionary design features that differentiated the International Space Station from every previous orbital outpost — Skylab, Salyut, Mir — were invented by the American side. These included reprogammable laptop-controllers for changing equipment configurations, massive power and thermal control systems, high-speed communications links that enabled ground scientists to directly operate on board equipment, and even doorways that were big enough to permit the transfer of refrigerator-sized equipment modules into the station and between the modules.

As to learning from the previous Russian experience with long spaceflights, the NASA teams observed and respected their Russian colleagues, and then figured it all out on their own pretty quickly.

Sending hundreds of millions of dollars to Russia in the mid-1990s was also supposed to prevent a flood of unemployed rocket scientists from seeking work overseas for "rogue state" missile programs. But the people who got the money weren’t missile builders at all, they were space designers. And by the time the money began to arrive, the real missile builders had already been laid off by the hundreds of thousands. There were always more than enough unemployed Russian rocketeers for hire overseas, and they had no trouble "following the money." The limitation was in the budgets and domestic industry of those would-be missile nations.

Making friends in orbit

One of the most **persistent** and **pernicious mythical benefits** of international space partnerships is that it promotes **peace** on Earth. That is, embarking on a complex and expensive joint space project actually tames the governments of unfriendly nations.

The Apollo-Soyuz linkup in 1975 is often portrayed as **inspiring politicians** in Moscow and Washington to end the Cold War. The space shuttle dockings with Russia's Mir in the late 1990s, and the subsequent Russian amalgamation into the International Space Station, were likewise portrayed as **forcing earthside diplomats** to be **nicer** to each other.

Top NASA astronaut Charlie Precourt proclaimed in 1998 that the partnership would force politicians to resolve disputes "that otherwise they wouldn't."

"They’ll look up there and say, ‘Well, we have an investment in that, too. We have to keep this relationship going in a proper direction,’ rather than doing something rash,” Precourt predicted.

**In reality**, joint space projects actually follow — rather than cause — relaxations of tensions. They are often performed to illustrate the new and improved diplomatic climate. A rooster may think its crowing brings the sunrise, but its performance is the consequence of a larger phenomenon, and not the cause. The same goes for the **bird's fellow fliers** in the **astronaut** and **cosmonaut corps**.

#### The CP spurs a follow-on merger into cooperation, but the sequence of starting first with unilateral action is key to space innovation.

Célia Cornec 19, Space Research Intern at the Foundation for Strategic Research, now MA Student at SciencePo (France), Winner of the UCLA Library Prize for Undergraduate Research, “The Post-Cold War Issues of the Space Conquest: Thoughts on the Future of an Increasingly Attractive Space”, 5/13/2019, https://escholarship.org/content/qt0kj1q52j/qt0kj1q52j.pdf

1.3.3 Competition as a driver of better cooperative performances

Nowadays, space is no longer just the playground of politics; a considerable importance is given to space exploration and innovation for the purpose of science. The ambitions are diverse: better understanding of the solar system and its planets, search for habitable planets, search for life beyond Earth… These are large-scale projects which necessitate important funding for research and development. In the world’s situation discussed above, where space innovation is no more a countries’ priority, maintaining competition between space agencies is a relevant way to keep innovation in the center of their activities. “Cooperation on a global scale draws on the competences of the various partners, created and stimulated through competition” (15), tells Jan Woerner on the ESA website. Generally, each space agency brings to a project its best capacities, in terms of technology but also of qualified scientists. Competition is a necessary tool to obtain a fruitful cooperation. Thus, competition and cooperation cohabitate in the post-Cold-War era, though the overall trend is to collaborate to address modern space topics. However, if this first part concentrates mostly on the traditional great powers, one cannot raise a complete analysis of the space post-Cold War issues without studying the new rising actors of the field. The impact of developing countries and the private sector on space-related activities are at the core of current and future preoccupations of outer space.

#### That solves extinction

Charles Beames 18, Chairman of the SmallSat Alliance, Executive Chairman of York Space Systems, former Principal Director of Space and Intelligence in the Office of the Undersecretary of Defense for Acquisition, Technology, and Logistics (OUSD(AT&L)), Col. (ret.) in the USAF where he served 23 years in space & intelligence leadership positions around the world, 8/8/18, “Op-ed | SmallSat Alliance is on a path toward a new space horizon,” <https://spacenews.com/op-ed-smallsat-alliance-is-on-a-path-toward-a-new-space-horizon/>

We find ourselves still at the dawn of a new space century, mindful of the victories and setbacks of our past, eager to pass the torch to the next generation of space visionaries, scientists, engineers, and enthusiasts. We look to the future not just to see how much bigger, faster, or higher we can reach, but also how the United States, and specifically the U.S. space community, can again inspire the nations of the world to align with us, as it did in the 20th century.

The SmallSat Alliance is an alliance of companies developing, producing, and operating in all segments of the ‘next generation’ space economy; championing renewed U.S. leadership in the burgeoning commercial space economy, and advocating for the transformation of government-led space capabilities. We are experienced space professionals who have chosen to join with others leveraging our decades of hard-won experience, to develop smarter ways to explore space in the 21st century.

A wonderful outgrowth of the legacy space program is the commercial, entrepreneurial, and job-creating commercial space business that it bequeathed. These next-generation enterprises range from multi-million-dollar startups providing rideshare opportunities or components for small satellites to multi-billion-dollar space data-analytic platforms reinventing urban car service and agricultural production. The early returns of this economic revolution are already on our doorstep: space data capabilities are exponentially growing elements of the 21st century world economy.

Beginning with the dreams and funding by successful tech entrepreneurs, enormous venture investments are already delivering wondrous benefits to the world.

Commercial Space – Profit and Non-Profit

There are really two major categories in the commercial sector, the profit driven and the non-profit. The classic for-profit companies include not only those designing, building, launching, and operating satellites but also the tech sector that is turning that raw space data into gold through machine-learning analytics. Since for-profit companies are no longer dependent upon the revenues generated by the Cold War space race culture of a bygone era, this new generation of space companies is able to more efficiently capitalize on Moore’s Law, the nonstop exponential growth in chip density, and the associated networking technology co-evolving with it. This new generation is building profitable businesses helping to clean up our oceans of garbage and debris with satellite surveillance, reconnoitering to assist in enforcing laws that protect our oceans from illegal, unregulated, unlicensed fishing, something that is rapidly depleting the world’s most valuable and essential lifeforms. It’s leading in the innovative use of low-cost satellite constellations to produce ubiquitous remote-sensing data, enabling small business owners to be more profitable and less wasteful. For example, precise timing signals from space are already optimizing transportation of people, goods, and services, with even further gains anticipated with the introduction of artificial intelligence to assist drivers, perhaps even someday replacing them entirely.

The non-profit sector is the other side of commercial space, concerned more for the general welfare of society, but every bit as integral to this new space enterprise. Much like every century before it in human history, ours is not without its unique challenges, some of which have been a consequence of the last, and all of which the space data domain can be leveraged to help solve. Examples are endless, but one challenge that this new space community is uniquely well-adapted for is to further inform worldwide resource allocation for the 21st century and beyond. These two primary resources are sustainable water and the materials needed for adequate housing for an ever-increasing human population. As cities and urbanization continue to expand, governmental planning challenges such as transportation design optimization for goods and services are only the beginning. Additionally, through using inexpensive remote sensing technologies, some members are designing space data analytics to mitigate human suffering from plagues, contain outbreaks, and combating illegal poaching. Some are connecting with other non-profits to curtail human trafficking for the sex trade or forced labor for migrant debt repayment. Still others are helping non-governmental organizations in their work to expose the use of children as soldiers. Addressing these challenges has little to do with resuscitating dreams conceived by long deceased science-fiction writers and much more to do with turning “swords back into plowshares” to solve real threats to humanity.

Other non-profit initiatives include pursuing an even more foundational understanding of who we are and how to be the best custodians of our environment. Much as exploring and monitoring the world’s oceans has advanced civilization through a better understanding of human life and the planet, so too does exploring and monitoring from space. Low Earth orbit (LEO) provides a unique vantage point to look back on the planet and understand what is happening, anticipate what might happen and prepare for the future. In addition to better understanding Earth, responsible and rapid exploitation of the low Earth orbit domain will enhance the understanding of the solar system and the rest of the universe. Small satellites already offer low-cost platforms to study and explore what lies beyond the Earth. Other members are pioneering the use of zero-carbon, hydrogen-based reusable propulsion systems to ensure we don’t worsen our atmosphere using kerosene-fueled rockets for the coming tsunami of satellite launches. Finally, a mission ensuring the general welfare and planet survival for the next thousand years is finally confronting the existential threat that asteroids and comets pose to humanity. These extra-terrestrial, deep-space threats are passing dangerously close to our planet, and today we have no solar map of them and no defense.

### 2NC---Unilat CP---AT: Cooperation Key

#### High transaction costs and managerial complexity ruin co-op

Christopher Johnson 11, International Institute of Space Law, Space Law Advisor for Secure World Foundation, Professor of Law (Adjunct) at the Georgetown University Law Center, Advanced Masters in Law (LLM) in Air and Space Law from Leiden University’s International Institute of Air and Space Law, Juris Doctor from New York Law School, “Policy and Law Aspects of International Cooperation in Space”, Proceedings of the 54th IISL Colloquium on the Law of Outer Space, 10/1/2011, https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=2044176

Risks of International Cooperation

Despite the many benefits, there are implicit and explicit risks to international cooperation. These include creating dependencies between the partners, which might include partners being responsible for different aspects of the mission where one partner’s failure to meet objectives deleteriously affects the entire mission.

When planning missions, mission designers frequently chart the organizational and developmental steps towards accomplishing the mission’s objectives. For project managers, this work breakdown structure shows the project’s “critical path” towards completion of the goal. The longest time towards completion of the project is determined to be the “critical path”. Where the project involves multiple partners, as would be the case in an international partnership, partners run the risk of crucial steps along the critical path falling to the mercy of foreign programmatic constraints, and thus outside of their control. Losing control of the critical path is another possible risk to international cooperation7.

Complications also include an increase of overall costs, perhaps due to what economists would call the “transaction costs” of international cooperation – costs associated with the choice of doing a project with international partners rather than purely domestically. Examples of these transaction costs include flying parts and personnel abroad, scheduling delays from foreign holidays, time and money spend assuring that domestic procedures comply with foreign laws and requirements, and any other concerns which might not happen were the project done by a single agency or country, and perhaps even within the same field office or centre.

International cooperation also increases the managerial complexity of the overall project, as the mixing of resources engenderers many legal, technical and programmatic hurdles, to be discussed below. This complexity balloons the administrative hurdles, leading to duplication of efforts and personnel. Additionally, owing to the dual-use nature of space hardware and space-based assets, technology transfer and export control issues will likely arise. The sharing of resources and technology also creates the risk that a nation is fostering the growth of industrial competitors whom might damage the competitiveness of its own domestic industries. If all of the mission objectives are not all met, there is the risk that the cooperation would be seen as a failure by stakeholder (like the public, governments, industry, or other interested parties).

#### Joint projects cause political backlash---the atmospherics of needing cooperation, opposed to parallel action with independent strength, causes future rollback

Taylor Dinerman 9, Senior Editor at the Gatestone Institute, Former Editor of SpaceEquity.com, Consultant for the Department of Defense, “Just How Soft Is NASA’s Soft Power Going To Be?”, The Space Review, 11/30/2009, http://www.thespacereview.com/article/1519/1

While the Chinese have been slowly opening their manned spaceflight program to the rest of the world, they have a long way to go before they match the US or, for that matter, the Russians. If China does in fact enter into a long-term relationship with NASA, this could be a good thing, but only if the US negotiates from a position of strength. Right now, fairly or unfairly, the administration is seen as weak.

The Augustine committee report states: “If the U.S. is willing to lead a global program of exploration, sharing both the burdens and the benefits of space exploration in a meaningful way, significant benefits could follow. Actively engaging international partners in a manner adapted to today’s multipolar world could strengthen geopolitical relationships, leverage global financial and technological resources, and enhance the exploration enterprise.” Nice words, but not a very substantial basis for policy.

The Bush Administration’s approach was arrogant. They said, in effect, “We’re going to the Moon, and eventually to Mars, if you want to come along, fine. Don’t get in the way and pull your own weight.” This may have disturbed some foreign space policymakers, but it at least had the virtue of being clear and reflecting financial and technical realities. Unless there is a radical change in both US policy and in the shape of the world’s economy these realities are not going to change for at least the foreseeable future; say twenty years.

As of now the Obama Administration is still making up its mind what to do, where it wants to go, and above all what it wants to spend. There is at least a possibility that the next NASA budget will simply reflect the status quo. If there is a large cut to the budget then the plans may change, but it will be difficult to durably change the overall direction of the program. At some point, a little more than a decade from now, America will send humans beyond low Earth orbit.

Atmospherics, however, are also important. If the US is seen as meekly asking the rest of the world to please support the goals and ambitions of the exploration program, it will be treated with contempt. This will not only make it exceptionally difficult to come up with acceptable international agreements, but it will almost certainly ensure that the next Congress or the next administration will seek to overturn any unfair, unequal, or humiliating deals made by the current leadership.

NASA’s experience with major international exploration agreements has been mixed. The Apollo-Soyuz deal put together by Nixon and Brezhnev in 1972 and flown in 1975 was a bit of propaganda for the idea of “detente”. As Walter McDougall put it in his authoritative …the Heavens and the Earth: A Political History of the Space Age, “it gave Soviet technicians the chance to traipse through US space facilities and flight operations firsthand.” That’s something the Chinese can do today simply by going on the Internet.

The Apollo-Soyuz flight was a dead end. Twenty years later, in February 1995, the Shuttle flew its first mission to Russia’s Mir space station. This was an early step in NASA’s second great international program, the International Space Station (ISS), and in spite of everything it has been a technological success. It has taught NASA and its partners invaluable lessons in building and maintaining large structures in space. The Clinton Administration, which created the program, and the George W. Bush administration, which largely built and paid for it, made sure that it was recognized as a US-led program.

Neither of these projects represents a good or accurate model for the current situation. With Apollo-Soyuz the hardware already existed, so modifying it for the “Handshake in Space” that was intended to symbolize the end of the US-Soviet confrontation was not that difficult. The ISS project was based on previous work done by NASA on Space Station Freedom and above all on the need for Clinton to show some magnanimity towards the Russians. Today Washington’s political motivation for a US-Chinese joint space project is pretty murky.

The Chinese have publicly laid out a path that does not require any international cooperation. They could change their plans, but this might upset delicate internal political or industrial arrangements that we know nothing about. There has been a lot of speculation about the exact motives that drive their human exploration program, but few hard facts have emerged.

On the other hand, we know that the Obama Administration and Congress are chock-a-block full of motivations, many of them contradictory or confused, but all of them expressed with passion. There are political motivations: after all, Florida, Texas, and California are all big voter-rich states. There are questions of prestige and international power. There are industrial, scientific, and technological reasons why leaders in Washington think that this is important. There is a strong desire on the part of both parties to use NASA’s accomplishments as a way to inspire kids to study science and engineering.

In all of NASA’s programs, ever since the Eisenhower days, there has been an element of “soft power”. Some administrations have used it more effectively than others, but it has always been there. Yet this kind of power is only a tool, not a goal in itself. If the US presents itself as too eager for partnership agreements or too weak to explore the solar system without assistance, then the world and the American people will only see softness.

#### Fiat can’t solve---politicization crushes morale and causes micromanagement---tanks solvency

Jeffrey Marlow 12, Geobiologist at Harvard University, Founder of the Ad Astra Academy, “IS SPACE GETTING TOO POLITICIZED?”, Wired, 6/6/2012, https://www.wired.com/2012/06/is-space-getting-too-politicized/

Oesterle’s characterization of Obama’s political calculus reflects a recent trend: despite widespread public support for space exploration, recent polls suggest that the issue is getting increasingly polarized. The overall percentage of the American population supporting the enterprise remained roughly constant between 2008 and 2010 according to the National Opinion Research Center, but the groups declaring that the government spent “too little” or “too much” both grew by about 5 percentage points.

This is an alarming development, because manned spaceflight seems to work best when it’s de-politicized, or, perhaps more accurately, de-partisanized. Space exploration is a long game: it requires long-term planning and a consistent goal-driven trajectory that builds on previous accomplishments. It’s difficult to fold this reality into the “what have you done for me lately?” culture of Washington, where failure to hit quarterly benchmarks is grounds for cancellation. Of course, government-sponsored space exploration also requires public support, and mobilizing enthusiasm without stoking partisanship is a fine line indeed.

If space exploration is something that we decide is worthwhile (and apparently it is), then the best policy is often to let previous plans germinate. As administrations come and go, the long term path will rarely be exactly what current leaders had in mind, but it’s better to make some progress toward a palatable destination than to make no progress toward the ideal one. This approach runs counter to the political impulse to exert strong opinions on every aspect of public life, the principle that if it’s possible to have an opinion, one should be had, ideally if it’s perpendicular to that of the opposition.

Ultimately, constant course corrections waste previous investments, sap institutional purpose and morale, and deliver uninspiring results. Ironically, in order to make more sustained progress and not be subjected to micromanaging debate, space exploration might be best served by falling off the political radar.

### 1NC---EU CP---Shell

#### The European Union should end all cooperation with the North Atlantic Treaty Organization and establish space cooperation with China and Russia by [ ].

#### The CP solves, spurs U.S. follow-on, and restores EU legitimacy.

Corneel Bogaert 19. Master’s in Space Studies from Ghent University, Master of Laws (LLM) at Katholieke Universiteit Leuven, Specializing on International, European and Criminal Law, “China, Mysterious as the Far Side of the Moon: A Window of Opportunity for Europe and Global Cooperation”, p. 15-16 [typo corrected]

Conclusion A famous quote by Napoleon on China states: “China is a sleeping giant. Let her sleep, for when she wakes she will move the world.” By now, it is clear that the giant has woken up and its space programmes along with it. Over the last twenty years China has become one of the larger spacefaring powers in the world. The descent on the far side of the Moon was not only a historic achievement in space exploration, but also a strong signal and concrete expression of China’s rising capabilities to the rest of the world. Moreover, China is only in its infancy of its space capabilities, and is expected to further emerge as a major spacefaring nation, potentially even as the major spacefaring power. China is notorious for its rather mysterious structural organisation. The same applies for its space policy. A strong military tradition negatively affected China’s reputation in international relations. A trait which was moreover amplified after the ASAT incident of 2007. However, China is visibly not interested in a new space race. Although the nation seeks to gain prominence in space with its recent achievements on the Moon, China desires to engage extensively in international cooperation. This has made the country an exciting place for international research. In the current US-dominated international space arena, two second-tier spacefaring nations like Europe and China could mutually benefit from such a cooperation. Europe has a lot of utility to complement the prestigious Chinese space program. A Sino-European partnership could be a win–win situation, based on their respective strengths: Europe’s valuable technological expertise and innovation capabilities, and China’s fast-rising financial and engineering resources. Moreover, such a partnership would contribute to China’s new international status as a responsible great power. At the same time, the associated costs would remain within Europe’s space budget. The Sino-European partnership constitutes relations with the EU and ESA. The two organisations overlap but are nonetheless separate entities. For the more political oriented EU, working together with China offers the opportunity to strengthen a European identity. However, as demonstrated by the arms embargo and Galileo initiative, if Europe pursues further cooperation with China, it will also run the risk of encountering opposition from the US. With the upcoming Brexit however, the member state with the most obvious transatlantic connection will drop out, so at least the EU will become less susceptible to the US. Still, an extreme reprisal measure adopted by the US, such as the suspension of NASA’s cooperation with ESA would be detrimental. A partnership with ESA on the other hand, is less political but more science based and technologically focused. Because of China’s uprising space capabilities, Chinese space science is new and somewhat lacks the space tradition of the most established agencies. ESA proved to be a reliable partner in solving China’s utility gaps. Taking into account the stated sensitivities of a Sino-European partnership, limiting such a partnership to ESA with limited involvement of the EU, would reduce the political dimensions and prevent possible resistance from European stakeholders or international partners. In such a configuration, the contribution provided by Europe to China’s lunar exploration would be limited, and the downside would be the impression of Europe being only a follower in future space exploration. While it would bring some real benefits to the European space programme, Europe’s overall position would appear weakened in the light of the much more visible achievements of other spacefaring nations, China above all. A Sino-European partnership thus offers great opportunities, but also requires a balancing of conflicting interest. Ultimately, the partnership is bound to be restricted. Such restriction would however be lifted if Europe could fulfil its unique role as a bridge builder. International cooperation has traditionally been one of the most striking features of Europe’s space policy. Cooperation is structurally engrained in the inner workings of both the EU and ESA. Through multilateral cooperation, it could also bring the US and China together. If it becomes a bridge-builder between these two opposing forces, Europe could leverage its long-standing partnership with Washington and its maturing relations with Beijing. Europe could become a trailblazer for a global cooperation in space. Moreover, its role would not be limited to that of a matchmaker, as it would also bring active European participation in a global cooperative approach to exploration. The area of human spaceflight seems like an appropriate playing field to achieve this goal. A milestone in this area would be that of a Chinese participation in the ISS programme, and international participation in the CSS programme. A manned international lunar base to conduct scientific research, would be another crucial stepping stone for a unified, cooperative approach to a human Mars exploration. The Global Exploration Roadmap is already a praiseworthy initiative in this regard. Mars has been globally acknowledged as the final destination of twenty-first century exploration, but its costs remain unfeasible without a multinational or global cooperation scheme. From a political perspective, a global cooperation would reinforce the role of and identity [of] Europe as a centre of gravity in international affairs, promoting cooperative international relations. The costs associated with this policy would remain affordable, as they would be spread across a number of partners. The greatest cost and risk, however, would be time, as a comprehensive and enduring international consensus might prove difficult to reach, and pursuing this strategy will inevitably be slow. Moreover, windows of opportunity do not last forever and must be seized before alternative, undesirable outcomes take root. Instead of being the arena of competition it once was, in the future, human space exploration should be intended as a catalyst for global cooperation.

#### EU legitimacy and norm-setting prevent global conflict and transnational threats---extinction.

Dr. Rosa Balfour 19, Senior Transatlantic Fellow at the German Marshall Fund of the United States, PhD in International Relations from the London School of Economics and Political Science, MA in History from Cambridge University, MSc in European Studies from the London School of Economics and Political Science, Senior Advisor to the European Policy Centre, Associate of LSE Ideas, “The European Foreign Policy in a Hostile Environment”, The Progressive Post, 4/11/2019, https://progressivepost.eu/debates/next-economy/european-foreign-policy-hostile-environment

In a brittle world without enduring strong international alliances, the debate on Europe’s ‘strategic autonomy’ has gained new resonance, but it should not shadow the EU’s unique key international assets in the global economy and multilateral order. Working with global networks to promote norms and public goods is key to push back on nationalism, the rise of geopolitics and transactionalism. Strategic autonomy’ and ‘complementarity with NATO’ usually appear in the same sentence in the European debate – the latest doctrinal iteration to be found in the EU Global Strategy of June 2016. The ensemble reflects Europe’s need to rely on its transatlantic relationship for security and territorial defence, empowering it to carry out foreign policy too. The EU’s greatest foreign policy achievement of enlarging to Central Europe after the Cold War, pursued in tandem with NATO expansion, is testimony to this pairing. Since the end of 2016, the US President’s international preferences undermine directly or indirectly Europe’s security. Whether it is the insistence on greater burden-sharing, US action in the Middle East, or trade disputes with China, current US policies put Europe’s security – already challenged by Russian action in Eastern Europe and the Middle East – at risk. European leaders have started to question whether the transatlantic relationship needs to be preserved no matter what, or whether Europe should emancipate from it. The debate on ‘strategic autonomy’ is animating recent efforts in the field of security and defence. It refers to the ability to make and carry out decisions on defence, to conduct military operations autonomously, and to have the industrial capabilities to do so. Even if this level of strategic autonomy were agreed upon, it would take a generation for Europe to affect the world stage. The focus on strategic autonomy speaks to present insecurities in European societies, but not to the EU’s international legitimacy where, possibly, the European Union has better opportunities to develop means of political autonomy which befit its history and international identity. The emerging debate on economic sovereignty is addressing for the first time the degree to which the EU can make political use of some of its economic and financial tools, such as the Euro as an international currency. After all, the EU and its Member States remain the world’s largest trade bloc and donor. On the multilateral stage, Europe faces an increasingly hostile environment but remains the best hope to pursue universal principles, such as human rights and the rule of law, which underpin the resilience of that multilateral system. How to partner with other countries and actors around the globe to push back on attacks to international order is no longer a second order priority. If the way ahead appears clear, achieving it is a tall order. The rationale for collective action for the EU seems obvious – the ‘politics of scale’, or to be stronger together rather than weaker apart – but historically difficult to achieve. The multiple threats and risks on Europe’s doorsteps have only minimally bridged the strategic divergence that continues to beset the continent, and the rise of the populist radical right is beginning to undermine existing European external policies, not to speak of a higher level of ambition. Looking at global politics from a non-European perspective, how Europe’s friends and partners around the world will welcome a bid for greater autonomy – politically, economically, and strategically – still needs to be seen. The EU’s worldview that it has acted as a ‘force for good’ is not uncritically accepted. After all, that ethical stand was also possible thanks to the EU’s belonging to a stable and hegemonic West. If Europe wants to engage with the world and simultaneously strengthen its strategic identity it needs to square some circles. Without giving into the facile critique that realism and geopolitics render multilateral principles obsolete and warrant hard-nosed politics, Europe should leverage its assets, which are irrevocably embedded in multilateralism and cooperation. Climate change, conflict prevention and mediation, and an open and fairer international trade system are among the assets that the EU can concretely work towards globally. To do so it needs to engage flexibly with global actors, focusing more on multilevel networks including civil society rather than on the traditional partnerships between governments, some of which are no longer benign or useful. Both will require a dose of humility in listening to non-European world views and of pragmatism in seeking appropriate strategies and paths forward. Last but not least, if Europe wants to imagine its own history of prosperity, democracy and peace as still relevant to the debates taking place in the rest of the world, it also needs to think about the global future sustainability of welfare, taking progressive politics outside national boundaries and engaging in a more global and open debate about public common goods.

**2NC---EU CP---U.S. Follow-On**

**Europe has sufficient clout to bring them to the table---taking the lead bolsters their cred globally**

Corneel **Bogaert 19**, Master’s in Space Studies from Ghent University, Master of Laws (LLM) at KU Leuven, Specialising on International, European and Criminal Law, “China, Mysterious as the Far Side of the Moon: A Window of Opportunity for Europe and Global Cooperation”, p. 13-14

3. The Moon as the eight continent: boosting global cooperation

Space has often been used as a **geopolitical tool**, not only in times of confrontation but also as a **symbol** and instrument of cooperation. Space thereby provides the opportunity to **connect** divided actors. Using China’s quest to the Moon as a **tool to create trust and cooperation** with a **reluctant** American partner, Europe could fulfil a **unique role** as a **bridge builder** between nations. International cooperation has traditionally been one of the **most striking features** of Europe’s space policy. Cooperation is **structurally engrained** in the inner workings of both the EU and ESA, since their very existence is the result of multilateral construction. It is perhaps for this reason that European stakeholders today maintain cooperative relations with almost all other space actors worldwide. **Through multilateral cooperation, it could** also **bring the US and China together**. If it becomes a bridge-builder between these two opposing forces, Europe could **leverage its long-standing partnership** with Washington and its maturing relations with Beijing. Moreover, Europe could become a **trailblazer** for a **broader** international cooperation in space exploration, possibly extending to Russia and other spacefaring nations, such as Japan and India.39 This would secure Europe’s **active involvement** without facing the dilemma of choosing between mutually exclusive partnerships or being limited to provide minor contributions to multiple partners’ endeavours. Being a bridge-builder would involve **core European geopolitical skills and values**. Its role would **not be limited** to that of a matchmaker, as it would also bring active European participation in a global cooperative approach to exploration.

In addition to its **intellectual capital**, Europe is the **only power** with the **critical mass** to **stand on an equal footing** with the Chinese and American giants. Taken together, European countries represent the world’s **largest trading block** and **exporter of capital**. The common currency, the **Euro**, has emerged as one of the world’s **major reserve currencies**. Despite the EU’s bumpy road, bouncing off one crises after the other, the **economic and demographic weight** of the continent is likely to be further strengthened. Finally, in terms of **technological innovation**, **scientific output**, and **industrial and financial assets**, Europe remains a **true protagonist** in the world arena. However, the failure to see Europe as a collective geopolitical whole stems from the fact that it often lacks a one voice system and that its achievements in the field of economic integration are unmatched in matters of collective defence, adding to the impression that it can do little more than exercising soft power. This does, however, not mean that **Europe can** no longer be a **produce**r of **global governance**, **shaping the global order** as much as the US or China. Europe remains a **structural power** and it must be **conscious** of its **great potential**.40 In creating more Europe, at pain of having no Europe at all, Europeans must also rediscover **international assertiveness**, to ensure its active participation in the construction of the international order they want to see. Space is a **playing field** where Europe can **achieve this goal**. Since the beginning of the space age, space activities, and human spaceflight in particular, have proven to be domains of high politics, **geopolitical value**, while also benefiting innovation, inspiration and socio-economic growth.

With regard to human spaceflight, the joint astronaut training programmes should be gradually broadened. Between 2007 and 2011, the space agencies of Europe, Russia and China already carried out the MARS-500 project, which was a psychosocial isolation experiment for an unspecified future manned mission to Mars. American co-operation with China in space, on the other hand, remained modest. A milestone in this area would be that of a Chinese participation in the ISS programme, and international participation in the CSS programme, of course the latter is much more likely. A manned international lunar base to conduct scientific research, would be another crucial stepping stone for a unified, cooperative approach to a human Mars exploration. This has been globally acknowledged as the final destination of twenty-first century exploration, but its costs remain unfeasible without a multinational or global cooperation scheme. From a political perspective, this option would reinforce the role and identity of Europe as a centre of gravity in international affairs, and promote cooperative international relations. The costs associated with this policy would remain affordable, as they would be spread across a number of partners. The greatest cost and risk, however, would be time, as a comprehensive and enduring international consensus might prove difficult to reach, and pursuing this strategy will inevitably be slow.41 Moreover, windows of opportunity do not last forever and must be seized before alternative, undesirable outcomes take root.

Throughout this paper, it has been shown that China is **willing** to cooperate on the international level. This is not limited to a Sino-European partnership, but also covers other international collaborations. For instance, the science payloads involved in the Chang’e 4 mission were, in part, developed by Saudi Arabia.42 More importantly, China also maintains relations with Russia. In fact, the Chinese crewed space vehicle Shenzhou, was developed after signing a deal with Russia in 1995 for the transfer of Soyuz technology. In present times, a formal alliance with Russia could also become tempting for China. It could change the current US-dominated space arena, and establish a new bipolar world order. Such a course of events would not only pose a huge threat for conflicts on a global scale, but it would also leave Europe with little room for geopolitical manoeuvring, forcing it to take a black or white stance vis-a-vis the two poles.43 By necessity, Europe’s foreign policy action should be directed to prevent this scenario. Cooperation in a **highly symbolical domain** like manned lunar exploration could become one of the **key action**s helping to **transform** the potential trend of **power politics competition** into **more cooperative, win–win approaches**.44 The Global Exploration Roadmap is an initiative with high potential in this regard.45 While the document is not creating any formal commitments, it does coordinate a global approach to space exploration. Most importantly, it connects all major space agencies, including that of China. Moreover, space has become an attractive indicator of China’s commitment to multilateralism, so it seems more likely that China will look for even deeper international cooperation. Indeed, if Chinese leaders eventually decide to embark upon a human lunar landing, it can be expected that they will use and present this endeavour as the antithesis of a space race. International cooperation in space is thus in the best interest of China, if it wants to be recognised as a part of the largest space powers.

### 2NC---EU CP---I/L

#### US military support for Europe through NATO is the key issue blocking the unity necessary for a build-up of European domestic capabilities.

David Herszenhorn, 19 (David Herszenhorn is chief Brussels correspondent of POLITICO, 2-14-2019, accessed on 5-29-2022, Politico, “Europe’s NATO Problem”, <https://www.politico.eu/article/europe-nato-problem-defense-procurement-training-research/>, HBisevac)

With U.S. President Donald Trump raising previously unthinkable doubts about America’s willingness to defend its traditional NATO allies, some European leaders, officials and military experts insist the Continent must do more to **defend itself**. “The EU for decades has profited from the protection the U.S. has provided,” Wolfgang Ischinger, a former German ambassador to Washington who is the chairman of the Munich Security Conference, said in an interview last weekend with the Funke media group. “Today, this protection is not a certainty anymore.” Proposals for more robust European defense range from a series of Brussels-based initiatives on procurement, training, and research and development, to the extension of France’s nuclear umbrella, to the development of a full-blown EU army, as endorsed recently by French President Emmanuel Macron and German Chancellor Angela Merkel. Paradoxically, perhaps, the biggest obstacle to the boldest of these proposals might be NATO — the very alliance that has safeguarded the Continent since the end of World War II. Opposition comes not only from the U.S., which despite Trump’s browbeating of allies to spend more, is intent on preserving a 70-year-old framework that lets Washington call the shots and put its interests first. There’s also pushback from NATO political leaders who are keen to protect their own institutional turf, as well as heavy reluctance from self-doubting Europeans. Proponents of a strong European defense insist the stumbling blocks have more to do with political and financial will than logistics. European diplomats and military experts who have considered the necessity and possibility of a Europe-led collective defense say that the EU’s capabilities are vastly underestimated — including by many Europeans. Were the EU simply to mass its serving military members it would have the second largest armed force in the world — a total of roughly 1.5 million service members — with only China having more, nearly 2.2 million. Military experts point to at least one conceivable approach that could deliver relatively quick deterrence against Russia without help from Washington, NATO or the U.K., which is aiming to leave the EU this year. Rough-sketched, the plan would require massing enough conventional forces in Eastern Europe so as to force Russian President Vladimir Putin, or his successor, to make clear any hostile intentions. And it would require an extension of France’s nuclear capabilities — the so-called force de frappe — to provide a security umbrella over the entire European Continent, with a confirmed large-scale Russian invasion theoretically triggering an immediate strike. Yet, as tantalizing as this sort of coordination and capability might be to Europe’s lonely hawks, such talk has **barely moved** beyond chit-chat in the non-classified “Public Square” space at NATO’s new headquarters in Brussels, where military officials in uniform and diplomats in business suits grab coffee, take money from the ATM, or pick up magazines in the press shop. And that’s largely because of the alliance itself. Under the guise of avoiding “duplication” and demanding “complementary” capabilities, the U.S. and NATO’s political leaders continue to put up strong resistance to the EU ever developing the command-and-control capabilities that would allow it to operate outside of the alliance’s existing umbrella. At NATO, no one wants to be seen discouraging greater EU military investment or cooperation. But the alliance has long served as an excuse for many European governments unwilling to tap tax-payers for often unpopular military spending. “There is a certain moral hazard in the classic economic sense here,” said a senior NATO diplomat. “There are some allies who are incentivized, say, to spend more on transportation infrastructure or health services.”

### 2NC---EU CP---Impact

#### EU self-sufficiency in defense is essential to check a laundry list of existential threats

Nick Witney 19, served as the first chief executive of the European Defence Agency in Brussel, senior policy fellow at the European Council on Foreign Relations, “Building Europeans’ capacity to defend themselves,” 6/25/19, https://www.ecfr.eu/publications/summary/building\_europeans\_capacity\_to\_defend\_themselves

The dilemmas that this paper has addressed persist largely because Europeans lack the institutional and political capacity to think strategically about their shared geopolitical situation and future. Neither the European External Action Service nor the various European Council formations have the bandwidth to deal with both the fundamentally important and the pressingly urgent – as recently underlined by the hijacking of the scheduled discussion of China policy at the March 2019 EU summit by the latest twist in the Brexit crisis. From time to time, the EU recognises and responds to this deficiency through a one-off exercise such as the 2003 European Security Strategy or the 2016 Global Strategy. Both worked well. But between such efforts, collective strategic reflection lapses, centrifugal tendencies reassert themselves, and – in the absence of the time or mechanisms needed to address crucial but slow-burning issues – the default option has been to outsource the continent’s strategic thinking to the Americans. Nuclear issues are perhaps the toughest and most controversial matters that a Europe with aspirations of strategic autonomy must find a way to grapple with. But they are hardly the only ones. After almost two decades of involvement in Afghanistan, it might be time for Europeans to take collective stock of what has been achieved and at what cost, and to consider whether their individual and collective interests are still best served by treating their engagement in that country as simply a tribute they must pay to Washington. The rising military power of China, marked by its ever-growing global reach and increasingly belligerent attitude towards Taiwan, is another issue that a Europe that aspires to take greater responsibility for its own security cannot ignore forever. Presumably, it is this vital missing element in any serious European efforts to take control of their collective destiny that has prompted German Chancellor Angela Merkel’s recent references to the need for a European Security Council. It may also be what French President Emmanuel Macron had in mind when he echoed the call for such an institution in his recent, widely published “address to the citizens of Europe”. Fundamentally, however, Europe’s strategic vacuum may owe as much to psychology as it does to institutional or political shortcomings. After all, it is easier to fall in with Washington’s world view than to conduct the sort of European debates that must inevitably expose transatlantic and internal differences. The old fault lines between Europeanists and Atlanticists run deep, and have recently been overlaid by profound differences in strategic outlook – not least between those who look east and those who look south. When some member states see Russia as an existential threat while others view such fears as little short of paranoia, and when some regard turmoil in the southern neighbourhood as something requiring proactive management while others see no need for anything but fences, the temptation to despair of any possibility of agreement, and to leave the leadership responsibility to America, is understandable. Understandable, but fatal – and unnecessary. The EU would never have got anywhere if it confronted only issues on which there was unanimous agreement. What has ensured progress has been the habits of solidarity and compromise – a readiness to expose and ultimately accept differences in outlook and priority, and then to strike deals that may not totally satisfy anyone but leave everyone better off than they were before. So it is with the imperative of building Europeans’ capacity to defend themselves. Proposals to strengthen the European pillar of NATO in terms of force deployments and capabilities, and to offer the US some level of operational burden-sharing through a division of labour, will inevitably leave different European constituencies feeling that one or other initiative is misdirected, even retrograde. But they should embrace both, in the recognition of the fact that collective progress towards a safer and more autonomous Europe is possible only with efforts to address the security priorities of all.

### 2NC---EU CP---Theory---AT: I-Fiat

#### On NATO policy, the devil’s in the details.

Clint Peinhardt & Todd Sandler, 15 (Clint Peinhardt is a Professor in the Political Science department at UT, and Todd Sandler is a professor of economics at the University of Wyoming and has received a NATO postdoctoral fellowship in science and a National Defense Education Association fellowship, August 2015, accessed on 5-24-2022, Oxford Scholarship Online, “Principles of Collective Action and Game Theory”, https://oxford.universitypressscholarship.com/view/10.1093/acprof:oso/9780199398607.001.0001/acprof-9780199398607-chapter-2, HBisevac)

A final distinction is between cooperative and noncooperative games. A noncooperative game has each player acting on his/her own. In contrast, cooperative game theory involves players acting in unison as a coalition to maximize some joint gain that is subsequently divided among coalition members. The **devil is in the details** because how to divide the **collective gain** is **never clear** and can be done in **various ways**. Even though this book is about transnational cooperation, we rely exclusively on noncooperative game theory for a number of reasons. First, all cooperative games can be expressed as a noncooperative game. Second, a noncooperative game can encompass cooperative or mutually beneficial outcomes along with mutually deficient outcomes. Third, by eschewing cooperative games, we do not have to impose a payoff division assumption that can always be subject to question. Fourth, countries cherish their sovereignty and rarely form tight, enforceable ties With Other countries that allow the collective to act as one, as required by cooperative game. For example, **NATO allies** must vote unanimously on **key policies** (for example, membership **expansion** or **changes** in **military doctrine**), thereby effectively preserving **members**' **sovereignty**. As such, NATO is a loose alliance because allies can block undesirable policy changes or decisions. Fifth, cooperative games require a good deal of algebra, which we can avoid by staying with a noncooperative game representation.

### 2NC---EU CP---T/C---Democracy

#### European leadership solves democracy.

Lizza Bomassi & Pierre Vimont, 19 (Lizza Bomassi, Deputy director of Carnegie Europe. M.Sc., London School of Economics, Pierre Vimont; Senior fellow at Carnegie Europe and former executive secretary-general of the European External Action Service, 12-11-2019, accessed on 5-20-2022, Carnegie Europe, "Reimagining a Global Europe”, https://carnegieeurope.eu/2019/12/11/reimagining-global-europe-pub-80554, HBisevac)

It is on democracy, unsurprisingly, that the traditional debate on values is most palpable. Today, the state of democracy and human rights globally is poor. Many see a waning commitment to these values from the traditional bastions of the current democratic world order. Yet this depiction hides a more nuanced picture. While executive-level support for democracy promotion in its more traditional homes has declined, its operational manifestation remains largely intact. Governments still channel a considerable amount of financial assistance toward the technical level in this field. And various democracy initiatives, such as Sweden’s Drive for Democracy, illustrate how individual EU member states have acted as champions of democracy promotion. This has sent a confusing message and led to different responses from different parts of the globe. Some have opted to approach this issue from a utilitarian perspective, either by providing purely technical assistance or by molding democratic models of engagement to the local context. Others perceive the Western democratic model as simply one of many different forms of governance. While Russia and China are not particularly keen for a European—or, for that matter, Western—leadership model, some countries in Asia, like India, and in South America and sub-Saharan Africa find some merit in the EU being involved in democracy promotion. But these countries see such investment as requiring a lighter touch and a deeper consideration of local specificities. It is by sharing Europe’s own experience and adopting what the EU’s outside partners often consider a less patronizing attitude that Europe is recognized as a useful partner. So, while there is space for the EU to lead in this field, it must choose to do so in a much more incisive yet nuanced way.

### 2NC---EU CP---T/C---Multilat

#### European leadership solves multilateralism.

Lizza Bomassi & Pierre Vimont, 19 (Lizza Bomassi, Deputy director of Carnegie Europe. M.Sc., London School of Economics, Pierre Vimont; Senior fellow at Carnegie Europe and former executive secretary-general of the European External Action Service, 12-11-2019, accessed on 5-20-2022, Carnegie Europe, "Reimagining a Global Europe”, https://carnegieeurope.eu/2019/12/11/reimagining-global-europe-pub-80554, HBisevac)

What does a collective vision of a global Europe look like from the point of view of the demand side? And how can this vision be translated into an operational program? The picture that emerges confirms that the EU must develop a more **flexible** and **nuanced** view of responding to global challenges. Outside partners consider the EU the standard-bearer for multilateralism and, as such, a **natural ally** in this environment. But the verdict on multilateralism in its current form is resounding—even deafening—ambivalence. Many Europeans regard it as an end in itself, whereas for other powers it is at best a means to be employed for any number of competing agendas. Its credibility is repeatedly put to the test when nation-states undermine the collective interest if doing so serves their purpose. In its worst form, multilateralism becomes a screen to hide behind, leading to indecision and inaction. Multilateralism in its current incarnation is seen as antiquated and out of touch with today’s globalized, transactional world. From the trade negotiations between the United States and China to the ongoing talks over the conflicts in Syria or Libya, multilateral organizations appear sidelined, outmaneuvered, and irrelevant—overtaken by events and left to deal with their aftermath. Yet as a tool, multilateralism also reveals its strengths, as illustrated by the EU itself in its long journey toward closer integration. Once clear boundaries and operational lines have been drawn, the EU has shown—with the competencies that the member states have given it—that a multilateral framework can be a force for **good**. This is nowhere more evident than in the EU’s trade and economic sphere, where Europe’s whole is stronger than the sum of its parts. The lesson here is that Europe needs to update both its internal cohesion and its multilateral doctrine to be considered a credible architect for a revised and more consensual multilateral global order. That order should be based on a vision of common political values that the EU and its outside partners can share **equally**.

### 2NC---EU CP---T/C---Prolif

#### EU leadership solves prolif.

Alexandra Marksteiner, 17 (Alexandra Marksteiner is an intern at the Atlantic Council’s Transatlantic Security Initiative, 6-18-2017, accessed on 5-21-2022, Atlantic Council, Alternative Futures: Rethinking the European Nuclear Posture, https://www.atlanticcouncil.org/blogs/new-atlanticist/alternative-futures-rethinking-the-european-nuclear-posture/, HBisevac)

However, we live in a time defined by **uncertainty**. Ideas once held as indisputable truths—be it the viability of the Alliance or the European project itself—are now being challenged by a myriad of internal and external forces, including the United States. This means that non-nuclear European states must remain mindful of a reality in which they may not be able to rely on the NATO nuclear deterrent. Given a **resurgent Russia** and the **shifting security landscape** at large, Europe cannot afford to be without a plan. Yet, it is important to frame this conversation in a cautious and nuanced way. With the suggestion that Germany build the bomb and Europe undergo nuclear rearmament, the current debate has taken an alarming turn. Should the worst come to pass and the United States closes the nuclear umbrella covering Europe by refusing to defend its allies with nuclear capabilities, European leaders should not have to choose between deterring nuclear-armed adversaries and NATO’s shared values of restraint, rule of law, and weapons of mass destruction (WMD) non-proliferation. A European nuclear deterrent is reconcilable with European commitments to international law (most importantly with the Treaty on the Non-Proliferation of Nuclear Weapons). In this alternative future, France, one of two nuclear-weapon states (NWS) in Europe, would replace the United States as the supplier in the nuclear-sharing arrangement. Depending on whether this arrangement would be sustained under the EU Common Security and Defense Policy or within NATO, the United Kingdom, which plans to leave the European Union, could opt in as well. France would pledge to use its warheads to defend its European allies against a nuclear strike. However, it would retain ultimate command over its own weapon systems. Some, such as social scientist Maximilian Terhalle, are worried that France’s arsenal, comprising almost 300 warheads, is too small to deter Russia—and justifiably so. Nonetheless, nuclear deterrence is not a numbers game. Deterrence is psychological and exists in the mind of the adversary. To be deterred, Russia must **believe** that a nuclear attack will be retaliated against and will come at an **unacceptable strategic** and **human cost**. Hence, France and the countries under its umbrella should focus on developing survivable delivery capabilities that can penetrate Russia’s sophisticated anti-access/area denial (A2AD) network, such as air-launched cruise missiles (ALCMs). Effectiveness, reliability, and readiness should be prioritized. With this arrangement, thedestabilizing effects of a sudden loss of deterrencewould be negated whilecomplying with international law**.** Since a scenario in which France assumes the **role** of the nuclear supplier **does not** have to involve a transfer of command or weapons, the provisions of the Non-Proliferation Treaty (NPT) would not be violated. Said plan would also disincentivize individual member states from turning nuclear by calming fears of vulnerability and serving as an insurance policy. Additionally, since the United States would be removing its weapons from military bases across Europe, the total number of warheads stationed on the continent would decrease, underlining Europe’s commitment to eventual disarmament.

### 2NC---EU CP---T/C---Cyber

#### EU leadership solves cyber better.

Peter Pijpers et al., 21 (Peter Pijpers is an Associate Professor of Cyber Operations at the Netherlands Defence Academy and PhD researcher at the ACIL, Dr Hans Boddens Hosang is an ACIL senior researcher and research fellow at the Netherlands Defence Academy, Dr Paul Ducheine is Professor of Cyber Operations at the Netherlands Defence Academy and Endowed Professor of Military Law of Cyber Operations and Cyber Security at the University of Amsterdam, 2021, accessed on 5-29-2022, University of Amsterdam Center for International Law, “COLLECTIVE CYBER DEFENCE – THE EU AND NATO PERSPECTIVE ON CYBER ATTACKS”, <https://ssrn.com/abstract=3962163>, HBisevac)

It can be assessed that, firstly, cyber-attacks predominantly fall **below** the threshold of the **use of force**, which implies that collective defence clauses meant for armed attacks are **incompatible** with most cyber-attacks. Secondly, cyber-attacks are often executed by non-State actors. Although Article 51 UN Charter was meant to regulate State behaviour, the inherent right of self-defence it reflects is a separate rule of customary international law. 81 The latter includes attacks by non-State actors, and after the 9/11 attack Article 51 UN Charter is also commonly read in that sense. Thirdly, the author and the origin of cyber-attacks (State or non-State actors) are sometimes **difficult** to **pinpoint**, referring to the **time-laps** between the malign cyber-**activity** and the actual **effect** of a cyber-attack. Establishing authorship and attributing a cyber-attack to an actor or even a State, without conclusive technical and forensic research is possible but is a political act. Nevertheless, and although with lower (overt) standards of certainty, attribution is nevertheless on the rise. Fourthly, cyber-attacks aim to affect the cognitive dimension via cyberspace. Often these attacks do not have a **physical** or functional **manifestation**, making it challenging to conclude that the **territory** of an EU or NATO Member State is **affected**. The **EU**, as an integrated and political entity, has a **broader scope** than NATO which can be used to **tackle** many issues related to **cyber-attacks**. The EU **competences coalesce** with the attributes of current cyber-attacks, especially when related to problems of attribution, the **virtual characteristics** of the cyber-attack, but primarily given the fact that cyber-attacks remain below the use of force. In that sense, the EU is better suited to respond to cyber-attacks. The EU is able to focus on collective measures below the use of force including diplomatic, economic and other instruments, thereby complementing NATO and not latently competing with it. However, while the current cyber diplomacy toolbox is a **welcome first step**, it is **insufficient** as a coherent EU joint response mechanism as it **lacks focus**. To strengthen the EU policy related to a joint response to cyber-attacks, the EU response mechanism would need to **operate separately** from **collective responses** to armed attacks since the latter are based on the inherent right of self-defence of Member States – individually or collectively. It should also operate separately from responses by single Member States, which include countermeasures against the use of force. Since collective countermeasures by the EU are not allowed, the EU’s joint response mechanism against cyber-attacks should revolve around lawful though unwelcome proportional repercussions and retorsions, including collective EU sanctions and issuance of diplomatic statements attributing cyber-attacks to alleged perpetrators.

### 2NC---EU CP---T/C---Warming

#### European leadership solves climate change.

Lizza Bomassi & Pierre Vimont, 19 (Lizza Bomassi, Deputy director of Carnegie Europe. M.Sc., London School of Economics, Pierre Vimont; Senior fellow at Carnegie Europe and former executive secretary-general of the European External Action Service, 12-11-2019, accessed on 5-20-2022, Carnegie Europe, "Reimagining a Global Europe”, https://carnegieeurope.eu/2019/12/11/reimagining-global-europe-pub-80554, HBisevac)

On climate change, the EU scores highly for being determined and showing real leadership in the face of adversity. The good news is that most nation-states recognize that this is not an area where one can go it alone. And while there remain skeptics on the causes of climate change, there is overall recognition that its physical manifestation is affecting all. India is justifiably proud of its admirable track record on climate change; yet it must deal with the reality that over 40 percent of its labor force is employed in agriculture. That is a serious vote bank for any politician. In this context, reconciling cleaner agriculture with industrialization is a political economy problem that trumps long-term growth. China and Middle Eastern countries are eager to cooperate on the technical level, but the technology transfers and capacity building needed to make a more climate-friendly infrastructure operational could have serious economic implications. The Russians recognize the importance of climate change because it is affecting some of their physical infrastructures. But they fear the narrative will be hijacked by overly politicized ideologies. Clearly, the EU cannot tackle climate change on its own, nor can it build a fortress around its effects. The union is simply not influential or rich enough to make the world follow its lead. However, the EU does have enough legitimacy and leverage to give a sense of direction to the climate issue. The overall message for the EU in this context is to persevere: find the areas where it can build support and stick it out. Leadership is sorely lacking in this space, and the EU’s choice to fill that role is primordial.

### 2NC---EU CP---Impact---BRI

#### EU leadership prevents the BRI from sparking conflict throughout Eurasia

I-wei Jennifer Chang 19, Master’s Degrees in Journalism and International Relations from the University of Maryland, Former Senior Program Specialist in the China Program at the U.S. Institute of Peace, “Europe, China, and a Stable Indo-Pacific Order”, AICGS, 1/17/2019, https://www.aicgs.org/publication/europe-china-and-a-stable-indo-pacific-order/

Chinese president Xi Jinping’s signature Belt and Road Initiative (BRI)—a massive, transcontinental mega-project utilizing economic, financial, infrastructure, and other connectivity links to bring China and the world closer together and propel China’s soft power—has now become the epitome of American and European fears of China’s global geostrategic designs. Western capitals have come to view BRI, along with China’s increased assertiveness in East Asia, as part of China’s grand strategy to challenge the Western-led and rules-based international order erected after World War II. For them, a China-led regional or global order would mean revising the rules of the game, weakening international norms and institutions, and promoting corruption and bad governance. Furthermore, Chinese economic practices could further destabilize financially weak and politically unstable states, as well as worsen political, economic, and social cleavages in these countries.

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European countries are concerned that BRI will worsen existing conflicts and internal divisions around the world. Ironically, some of the major existing conflicts are rooted in the historical legacy of European colonialism. From Myanmar’s ethnic conflicts to tensions between India and Pakistan, the European and Chinese roles have been reversed, with former colonial powers seeking to offset the negative implications of Chinese economic and political actions in conflict-affected regions.

Back home in Europe, Chinese investments have sowed divisions between countries in Western Europe, on the one hand, and those in Central and Eastern Europe, some of which have formed a 16+1 grouping with China, on the other hand. In 2016, Greece and Hungary refrained from criticizing China’s aggressive actions in maritime and territorial claims in the South China Sea. In June 2017, Greece vetoed a joint EU statement at the United Nations that criticized China’s human rights record. Former German foreign minister Sigmar Gabriel warned that “if we don’t develop a [European] strategy regarding China, then China will succeed in dividing Europe.”

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European governments also believe that Chinese-backed infrastructure projects are saddling developing countries from Asia to Africa with debt, which will lead to greater Chinese political influence in those countries and toward a Chinese model of development that ignores the EU’s high social, economic, and environmental standards. Chinese economic engagement in the Balkans, such as in Serbia, is creating alternative incentives that move these countries away from adherence to EU standards, which, in turn, may not only delay their accession to the EU, but also fuel corruption, undermine governance reforms, and facilitate state capture. Europeans do not want to see scenarios where China attaches political strings to its economic support to financially unstable countries, particularly in Central and Eastern Europe, but also other parts of its immediate neighborhood such as North Africa and the Middle East.

U.S. Indo-Pacific Strategy Stokes Sino-Indian Tensions

Unable to compete with the cash-flushed Chinese state companies that are often willing to engage in murky deals with host governments, at times flaunting established norms and even sanctions, the United States and European Union have in recent years proclaimed their respective strategies to deal with BRI: the U.S. Indo-Pacific Strategy and the Asia-Europe Connectivity Strategy. The EU’s connectivity strategy emphasizes sustainable and international rules-based connectivity, and fostering bilateral, regional, and international partnerships that are “sustainable, open, inclusive, and rules-based.” The U.S. Indo-Pacific Strategy aims to create a “free and open” Indo-Pacific, borrowing the phrase from Japanese prime minister Shinzo Abe’s Indo-Pacific plan. As Secretary of State Mike Pompeo said, “We […] have never and will never seek domination in the Indo-Pacific, and we will oppose any country that does.” Viewing the vast expanse of the Indian and Pacific Oceans as an area of strategic importance to the United States, Washington wants to utilize a rising India as a regional balancer to Chinese expansionism and revisionism in the Indo-Pacific.

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The U.S. Indo-Pacific Strategy has created new tensions with the Chinese government. With its geographical connotation that elevates India’s position, the Indo-Pacific Strategy is seen by Beijing as part of a broader U.S. containment strategy against China’s rightful rise to power in its neighborhood. India’s challenge to China was underscored by the standoff between the Chinese and Indian militaries at the Doklam plateau in Bhutan in 2017. No longer diminishing the strategic challenge posed by India, Beijing soon came to realize that it had to improve relations with New Delhi to relieve Indian strategic pressure on China. In South Asia and the Indian Ocean region, CPEC has reinvigorated national ambitions in Pakistan, while conversely spurring competitive tendencies with India, which is wary of China’s expanding presence in Sri Lanka, Bangladesh, and the Maldives.

Chinese Activism in Afghanistan Motivated by Terror Concerns

Since the high-level Wuhan summit in April 2018 between Xi Jinping and Indian prime minister Narendra Modi, both sides have agreed to cooperate on Afghanistan’s economic development and to jointly train a small group of Afghan diplomats. Indeed, Sino-Indian cooperation in Afghanistan is one bright spot— and a potentially positive step to help improve governance, institutions, and security in Afghanistan—in the broader relationship marked by mutual strategic distrust. This joint step forward in Afghanistan, which took several years to realize, also shows China could work with India despite the Pakistan factor. Yet, China’s policy move seems to be motivated more by its domestic counter-terrorism agenda in Xinjiang vis-à-vis the Uyghur Muslim minority than by development goals for Afghanistan.

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In the past, China sought to assist Afghanistan’s economic development and supported the peace process between Kabul and the Taliban as means to stabilize the country—and it still does to a certain degree. However, due to Beijing’s limited influence in Afghanistan’s peace process and state-building, it became primarily motivated by internal concerns that extremist ideologies in Afghanistan would spill over into Xinjiang and encourage further terrorist attacks by the discontented Uyghur population. Contrary to this belief, China’s own repressive crackdowns on Uyghur human rights are the main drivers of Uyghur reprisals against the Chinese state—and not the oft-cited overseas influence from co-religionists in Afghanistan.

To move the Afghan peace process forward, U.S. and European officials have long wanted Beijing to use its leverage over Pakistan to pressure the Taliban to join peace talks with the Afghan government. Beijing, however, has been hesitant or unable to do so. The Chinese government insists it does not have that level of influence over Pakistan or the Afghan Taliban. Clearly, there are limits to what China is politically willing to do to help reduce tensions in regional conflict zones. The EU has a diminished role in reducing violence in Afghanistan or promoting peace between Pakistan and India, and thus wants China to play a more constructive role in the political settlements of these conflicts. But Beijing has a mixed record on such issues, particularly when its national interests do not correlate with the demands of the peace process.

The EU Caught between the U.S. and China

The U.S. Indo-Pacific Strategy also comes amid increased geopolitical competition between major powers. European governments are concerned about the implications of heightened U.S.-China tensions surrounding the ongoing bilateral trade and investment disputes, as well as strategic issues emanating from China’s increased assertiveness in the South and East China Seas, over Taiwan, and tensions over China’s handling of the North Korean nuclear issue. Any miscalculation could potentially lead to the outbreak of a regional conflagration.

While the EU shares some principal concerns outlined in the U.S. Indo-Pacific Strategy, it is keeping its distance so as to not attract Beijing’s ire. Although positions differ among European governments, the EU has not embraced the revitalization of the Quadrilateral Security Dialogue (“Quad”) in 2017 involving the United States, Japan, India, and Australia. Many European governments do not want to choose between their traditional ally, the United States, and China, their leading economic partner and major source of foreign investment. As Washington is on a gradual strategic retreat from global affairs, China could be a useful partner for European governments that also have to manage Russia’s spoiler role.

EU Competitiveness and Joining CPEC

Europeans’ reservations about China are igniting a Europe-wide debate about how to handle China’s expanding economic and political profile in the region. Many in Europe are anxious about Chinese investment practices and relative economic competitiveness vis-à-vis European companies. Chinese state companies investing in Europe seek access to technology from European companies, leading the EU to call for more stringent screening of foreign, namely Chinese, investment in the region. Until recently, foreign companies were required to form joint ventures with Chinese companies in order to gain market access in China. Additional government policies effectively force foreign investors to transfer technology to their joint venture partners, which significantly tilts the competition in China’s favor. Chinese state-owned enterprises also benefit from hefty financial support from state banks, leading the EU and the U.S. to decry Beijing’s violation of free market principles and fair competition. In April 2018, a group of 27 EU Ambassadors to China signed a report criticizing BRI, which it said “runs counter to the EU agenda for liberalizing trade and pushes the balance of power in favor of subsidized Chinese companies.”

Many in Europe are anxious about Chinese investment practices and relative economic competitiveness vis-à-vis European companies.

Far from dismissing BRI, European companies also want a share of the infrastructure and connectivity opportunities. The UK, German, and French governments and private companies have expressed interest in participating in the various energy, infrastructure, and technological projects under CPEC. In a visit to China, French president Emmanuel Macron told Xi Jinping that CPEC was good connectivity for the region. The French government emphasized it hopes that French companies will have “equal opportunity” to invest in Pakistan. The UK government released a statement that “the UK is poised to be a key partner of CPEC.” The larger question is whether CPEC can be extended to other countries given its political, economic, and strategic importance to both Beijing and Islamabad. The Chinese government has publicly said that it welcomes foreign participation and investment in CPEC, including from India, Iran, Russia, Saudi Arabia, the United States, and European countries, so as to create an image of inclusivity with benefits for all, though CPEC remains a China-Pakistan enterprise that is tightly controlled by these two governments.

As Pakistan prepares to approach the International Monetary Fund (IMF) for a financial bailout for its current account deficit and worsening financial situation, observers have raised questions about the financial viability of CPEC. As a result, Pakistani prime minister Imran Khan has sought financial aid packages from many countries, including Saudi Arabia, the United Arab Emirates, and China. European governments could provide Pakistan economic and other assistance and urge high governance standards for CPEC. Such external involvement could lead Pakistan and China in the long run to be more transparent and inclusive in the procurement process for CPEC projects.

The United States and European Union share common concerns about China’s global presence and possible dominance and thus should strengthen transatlantic cooperation and coordination to address a whole gamut of concerns arising from Chinese government’s foreign investments, China’s military assertiveness in East Asia, and its political interference in BRI countries. The EU can leverage its reputable political neutrality, diplomatic activism in conflict mitigation, and engagement in regional institutions to complement the U.S. realist strategy and U.S-led security architecture in the Indo-Pacific. The EU should develop strong partnerships in other regions to address China’s rise more broadly and the Belt and Road Initiative in particular. The EU needs to enhance cooperation not only with the Indo-Pacific region, but also Eurasian countries along the Belt and Road in order to steadfastly promote its high standards on sustainable economic development and good governance and to uphold the liberal international order.

#### Nuclear war

Dr. Stephen Blank 12, PhD, Senior Fellow at the Strategic Studies Institute at the US Army War College, "Making Sense Of Moscow’s Syrian Gambit," 6/27, http://www.sldinfo.com/making-sense-of-moscow%E2%80%99s-syrian-gambit/

Beyond that Moscow was and still may be equally anxious that the “Arab Spring” or some analogue of it might erupt in Central Asia where it even publicly voiced its apprehensions about that in April 2011.[xi] Any such uprising might spread throughout Central Asia and trigger an explosion on a scale resembling or even surpassing Syria’s current travails. And there are analysts who have publicly warned that such a revolution could occur under the inspiration of Arab events.[xii] Moreover, Russian perceptions of disaster were quickly confirmed as Libya fell into civil war and as it became clear that Islamist factions might actually take power in one or more of the affected Arab states. Russian discussions of the Arab Spring regularly complain that these revolutions’ likely outcome is an Islamist takeover leading to a protracted civil war or at least civil strife as those forces seek to impose their vision of a just society on their countries if not neighbors as well.[xiii] Since Moscow is currently fighting an Islamic insurgency in the North Caucasus and fears for one in Central Asia the prospect of other Islamist victories or civil wars engendered by attempted Islamist takeovers in regions where Moscow still perceives as its strategic perimeter might evoke profound nervousness if not anxiety in Moscow. (For a look at a video showing Russian attack helicopters of the sort being sent to aide the Assad regime see http://www.youtube.com/watch?v=bKr\_eOk8mNk II Strategic and Geopolitical Goals Beyond these compelling domestic reasons for resisting the Arab Spring, Russia has equally profound strategic objections to Western interventions in the Middle East. These include but go beyond the belief that the West deceived Moscow regarding Libya and used the UN resolutions on Libya to create a precedent as in Kosovo for a war on behalf of democracy promotion, or, more cynically, for French access to Libyan oil and gas. If the democracy virus could easily spread to Moscow’s restive Muslim south or Central Asia, democracy promotion on the wings of NATO aircraft threatens Russia’s fundamental domestic system and great power interests. Since 1991 Russia has professed that any regional strife in and around its (i.e. Soviet) perimeter not only exposes it to war or at least significant threat, it might also escalate beyond anyone’s control as in Iraq and trigger a protracted war that could escalate vertically even to the nuclear level if Russia is drawn in.[xiv] Alternatively it could escalate horizontally if it spreads throughout the Middle East, which Moscow still claims as its strategic perimeter. Given Moscow’s lack of confidence in Western judgments and suspicions of its inveterate hostility to Russia, it is hardly surprising that Russian spokesmen from Putin and Medvedev down have repeatedly threatened that intervention in Arab revolutions could escalate all the way up to nuclear war.[xv]

### 1NC---China Coop CP---Shell

#### The United States federal government increase cooperation over the exchange and management of non-sensitive space situational awareness information and ban anti-satellite tests with the People’s Republic of China and Russia.

#### Says yes---the plan’s both a signal AND verifier of restraint.

Weeden and He ’16 [Brian and Xiao; April 2016; Director of Program Planning for Secure World Foundation, Ph.D. in Public Policy and Public Administration from George Washington University in Science and Technology Policy, M.Sc. in Space Studies from the University of North Dakota; Assistant Research Fellow at the Institute of World Economics and Politics in the Chinese Academy of Social Sciences; The National Bureau of Asian Research, “U.S.-China Relations in Strategic Domains: U.S.-China Strategic Relations in Space,” <https://www.nbr.org/wp-content/uploads/pdfs/publications/special_report_57_us-china_april2016.pdf>; RP]

Areas of Divergence and Recommended Mechanisms to Manage Tensions and Crises

The development, testing, and employment of dual-use capabilities. One of the most significant areas of tension will be the development, testing, and employment of dual-use capabilities that have both military and nonmilitary uses. Many space technologies are dual-use in nature: rockets are used to loft humans and peaceful satellites into orbit as well as to hurl conventional and nuclear warheads at targets on earth. Many satellite applications such as remote sensing, communications, and navigation have both commercial and military applications and end users. The commoditization of space technology and the expansion of commercial activity in space are increasingly breaking down traditional silos between military, civil, and commercial uses of space, thereby blurring the lines even further.

The development of robotic RPO, which involves the close approach and potential docking of two or more unmanned space objects, currently poses a significant challenge to a stable relationship. Such operations form the foundation of capabilities essential to the next generation of space activities, including on-orbit satellite servicing, refueling, repairs, formation flying, and the ability to actively remove large space debris. However, they are also vital to on-orbit inspection of satellites and intelligence gathering as well as co-orbital ASAT weapons. Over the last decade, both the United States and China have conducted a number of RPO demonstrations in orbit, which have heightened tensions and raised questions on each side about what the ultimate purpose is for the other’s development of these capabilities.64

A second area of tension over dual-use capabilities is the development, testing, and employment of direct ascent kinetic-kill weapons. Such systems utilize rockets to place a kill vehicle on a ballistic trajectory to intercept and destroy a space object by colliding with it. The United States has been developing direct ascent kinetic-kill technology for decades. Although it has used the technology for ASAT capabilities in the past,65 it currently does not have any acknowledged kinetic-kill ASAT programs and states that current programs are for missile defense only.66 China’s activity in this area has been more recent and has focused on developing and testing direct ascent kinetic-kill technology for ASAT capabilities, although it has recently justified the testing as related to missile defense.67

In the case of a conflict, the presence of operational ASAT capabilities on both sides could be a strong driver for crisis instability. Chinese military authors writing about space doctrine are increasingly focused on the importance of first strikes against U.S. space assets in order to seize the initiative and deter a U.S. attack.68 At the same time, the United States is increasingly worried about Chinese conventional ballistic missile attacks on carrier battle groups and land bases in the Asia-Pacific, which utilize ISR satellites for targeting. In response, the United States is considering “left of launch” capabilities that could include using ASAT systems against Chinese satellites to disrupt the ballistic missile kill chain.69 Thus, a crisis scenario between the United States and China could include a race condition where both sides move to strike first against the other’s space assets, which could cause the situation to escalate out of control.

Transparency and confidence-building mechanisms for managing tensions and crises. The prospects of banning or prohibiting the development of direct ascent kinetic-kill and RPO technologies are slim. RPO technology has many legitimate peaceful uses and potentially significant commercial applications. Both the United States and China are likewise developing their direct ascent kinetic-kill technologies as a result of strong, but different, national interests that are unlikely to disappear in the foreseeable future. Moreover, verification challenges associated with the space domain will continue to impede any arms control initiative that is built on bans or limits on deployment of technology or capabilities.

A more promising approach is to focus on transparency and confidence-building measures for both direct ascent and RPO. TCBMs are a means by which governments can share information to help create mutual understanding and trust and reduce misperceptions and miscalculations. Although not new, TCBMs represent a shift for the space world, which has long focused its efforts on pushing for legally binding arms control agreements and treaties. The recent report from the UN Group of Governmental Experts, in which the United States and China both participated, highlights several areas for space TCBMs: information exchange on space policies, information exchange and notifications related to outer space activities, risk reduction notifications, and contact and visits to space launch sites and facilities.70

Improving information on activities in space likely holds the most promise for mitigating tensions in the U.S.-China relationship in this domain. While determining a satellite’s exact capabilities and function is still difficult, SSA capabilities have developed to the point where it is becoming possible to verify actions and activities in space. The U.S. military already maintains a catalog of more than 22,000 human-generated space objects in earth orbit, much of which is available publicly and also shared with all satellite operators.71 China is currently developing its own SSA capabilities and, presumably, its own catalog of space objects. Russia, several European countries, India, and many other spacefaring nations are also increasing their own SSA capabilities, and most recently actors in the private sector have started to develop such capabilities as well.72

As SSA capabilities continue to improve and proliferate to other countries, it becomes increasingly possible that they may be able to serve as a new type of national technical means to underpin bilateral and multilateral political agreements on responsible and irresponsible behavior in space.73 Such agreements should be aimed at limiting dangerous or provocative actions, such as close approaches of national security satellites;74 signaling restraint for kinetic testing and deployment of new capabilities; and making political pledges to refrain from first use of destructive counter-space weapons.75

A key challenge in developing these agreements will be overcoming cultural and bureaucratic incentives for opacity on both sides. In the United States, the national security community has a deeply rooted culture of secrecy and unilateralism in the space domain that results from policy decisions made during the Kennedy administration as well as the consideration that space remains the last domain where the United States has a decisive advantage. For China, which sees itself as significantly inferior to the United States, opacity in space activities and programs is seen as one of the few tools to offset overwhelming U.S. capabilities and resources. Both countries also have the usual organizational silos and impediments to sharing information internally that are inherent to all large bureaucracies and undermine bilateral sharing.

Both countries need to come to the realization that enhancing SSA capabilities and increasing transparency on activities in space are in their national interests. While some more exquisite national SSA capabilities should be reserved for security uses, there is a much broader set of basic SSA capabilities that are relatively common among all spacefaring nations and essential to safe space activities, including those of commercial satellite operators. Increased sharing of data from these capabilities and collaboration on enhancing and improving them will result in positive externalities that will benefit all countries.

### 2NC---China Coop CP---China Says Yes

#### China will choose cooperation over competition.

Weeden and He ’16 [Brian and Xiao; April 2016; Director of Program Planning for Secure World Foundation, Ph.D. in Public Policy and Public Administration from George Washington University in Science and Technology Policy, M.Sc. in Space Studies from the University of North Dakota; Assistant Research Fellow at the Institute of World Economics and Politics in the Chinese Academy of Social Sciences; The National Bureau of Asian Research, “U.S.-China Relations in Strategic Domains: U.S.-China Strategic Relations in Space,” <https://www.nbr.org/wp-content/uploads/pdfs/publications/special_report_57_us-china_april2016.pdf>; RP]

The fourth and final focus of China’s space activities is to strengthen cooperation and improve bilateral relationships with other major powers, of which the most prominent is the United States. China has stated that the development of its space capabilities should not be achieved at the cost of bilateral relations or mutual confidence with other states.52 A space arms race may seriously deteriorate China’s external environment and divert precious and limited resources away from urgent domestic areas. In addition, it could shift China’s broader foreign policy and grand strategy from competitive cooperation to total confrontation. The costs of a hostile space arms race and direct conflict with the United States would thus far outweigh the benefits provided by new space capabilities. Therefore, China has a clear interest in using its development of space capabilities to promote bilateral cooperation and the formation of international regimes. At the very least, such development should not harm these important diplomatic goals. Effective cooperation in the space domain may help China and the United States show goodwill to each other and set a model for bilateral cooperation to handle security and governance problems. No matter whether this is called a “new type of great-power relationship” or a “new-model major-country relationship,” a desirable Sino-U.S. bilateral relationship in space should not only encourage mutual respect and avoid confrontation but also contribute to solving global challenges such as climate change.

### 2NC---China Coop CP---Russia Says Yes

#### Russia says yes, enabling a transition to decentralized network control that integrates and automates collision warning.

PETR O. SKOBELEV and OLEG I. LAKHIN Institute for Control of Complex Systems of the Russian Academy of Sciences, ’18, Software Engineering Company “Smart Solutions”, Russia, “TOWARDS THE DIGITAL PLATFORM AND SMART SERVICES FOR MANAGING SPACE TRAFFIC” Int. J. of Design & Nature and Ecodynamics, Vol. 13, No. 2 187–198

4 DIGITAL PLATFORM AND ECO-SYSTEM OF SMART SERVICES FOR ADVANCED SPACE TRAFFIC MANAGEMENT

Advanced space traffic management (ASTM) involves digital platform for building an eco-system of smart services [10, 11] – to combine different models and methods for developing new generation of space systems. The working paper submitted by the Russian Federation at the 59th session of the Committee on the Peaceful Uses of Outer Space (30.01.2017 – 02.10.2017), titled “Additional ideas on the set of goals to achieve Vienna consensus on safety in outer space and the need for thorough understanding on the modalities of consideration of complex issues related to space traffic management, and justification of the great expectations of early decisions in this field” may form a new legal basis for developing new space platform for cooperation, suggesting the following steps:

• to create and agree the concept of traffic management in space based on thorough study of all problematic issues and economic risks;

• step transition from ensuring safety of space operations at the level of documents of voluntary execution to the rules governing traffic in space;

• to create a single UN-based digital platform for monitoring and dissemination of information about objects and events in the near-Earth space;

• introduction of formal requirements for accuracy, completeness and timeliness of providing monitoring information about objects and events in the near-Earth space.

The main tasks of creating a digital platform for managing space traffic are the following:

• developing guidelines, standards and procedures relating to safety of space operations and avoiding collision of spacecraft with operating spacecrafts or elements of space debris;

• development and implementation of rules for provision and use of information on the situation in space;

• prevention of further generation of space debris and implementation of measures for safe cleaning of the near-Earth space from space debris;

• control of the state of the orbital group in order to identify dangerous flight situations and develop recommendations for their parrying in operational mode;

• provision of continuous updating of the space-time model of the near-Earth space;

• development of recommendations on planning of orbital operations in order to improve safety of space systems traffic and movement of individual spacecrafts in the current and forecested space environment;

• timely, complete, authentic and accurate communication of information about objects and events in the near-Earth space to consumers;

• carrying out analysis of processes of managing spacecrafts as a part of space traffic control technology;

• participation in planning and preparation for the launch of new spacecrafts and space systems in order to assess the risks for the expected period of operation, justification of acceptable orbits, correction of time for the launch of carrier rockets and boosters. and boosters.

Based on these tasks, the following key “smart services” can be developed (Fig. 3):

• smart services for ballistic models;

• smart services for models and methods of data analysis;

• smart services for planning at all levels.

The features of any “smart service” should be the following:

• Ontology-driven Knowledge base – which should contain a semantic network of concepts and relations of the domain area [12];

• Autonomy – the ability to continuously respond to events, make plans and achieve their fulfilment.

The platform will be based on mathematical models and methods of ballistics, which should provide the following possibilities:

• creation of a ballistics-navigation support system for flight control for a large number of multi-type spacecrafts controlled from a single mission control center;

• methods of project-ballistic analysis and expertise of orbital construction of space remote sensing systems, communication and retransmission;

• development of software for selection and calculation of parameters of orbits for disposal of spacecrafts;

• improving methods for calculating dangerous encounters and parameters of evasive maneuvers for spacecrafts;

• methods of ballistic design of space complexes for orbiting maintenance of spacecrafts in the near-Earth orbits;

• improvement of methods for calculating ballistic schemes for removal of largesized space debris;

• comprehensive methodology for predicting technogenic pollution of an area of 1100 (up to 2000) km with objects larger than 10 cm;

• development of a methodological approach to assessment of safety of payload generation scheme;

• improvement of methods and technologies for traffic control and prediction of dangerous encounters;

• development of methods and technologies improving the accuracy of forecasting the time and impact point of unmanaged space objects;

• study of the evolution of “clouds” of space debris, formed as a result of destruction of rocket and space equipment objects in the low-earth orbit;

• improving interaction between organizations engaged in safety analysis and preparing and launching space-mission vehicles;

• creation of space observing devices in the visible and infrared ranges for fragments of space debris in the low-earth orbit;

• measures for prevention of the risk of collisions of functioning spacecrafts with formed fragments.

The development of the platform will make possible to significantly improve the quality and efficiency of space traffic management in the context of constantly growing technogenic pollution of the near-Earth space, namely:

• maintenance of space vehicles of the Russian orbital group, as well as identified potentially dangerous space objects and risk objects;

• control of implementation of the stages of spacecraft launch into target orbits, measures to remove the spent Russian spacecrafts, the upper stages of launch ve-hicles and boosters into the “dead” zones and into orbits with a limited life, assess parameters of the state of accompanied spacecrafts (including in non-emergency situations);

• assessment, identification, forecast, analysis, and ballistic support of dangerous situations, including destruction of space objects in the near-Earth space, dangerous encounters of spacecrafts with potentially dangerous space objects, forecasting descent from orbits and ground impact of risk objects identifying time and possible impact area.

The next key element of the space traffic management is the data analysis services – aimed to improve technologies for analyzing flights parameters of spacecrafts and their control systems, forecast their functioning on the basis of accumulated knowledge base of flight data, as well as monitor the state of elements of the ground stations. Figure 4 shows the structure and integration of these services.

The main functions of the data analysis services are the following:

•  collection, processing and storage of information on flight data of individual spacecrafts and spacecraft systems;

• forecast of operation of spacecrafts and space systems based on the accumulated knowledge base of flight data;

•  monitoring the state of the elements of the ground stations.

The proposed approach provide solution for solving the problems of telemetric and information support for flight control of manned and automatic spacecrafts and space systems for the benefit of creating the unified space traffic management technology for a large number of spacecrafts.

In order to create services for strategic and operational management of large-scale orbital groups of spacecrafts, it is necessary to use models and methods for allocating resources of ground-based and satellite spacecraft control tools, as well as mutual maneuvering of spacecrafts within the existing space technology capabilities (Fig. 5).

With the use of developed platform it becomes possible to provide modernization of the Center for situational analysis, coordination and planning to manage a large number of different types of spacecrafts, as well as to support interaction between spacecrafts and ground stations for scientific, social and economic applications. At the same time, an end-to-end network of spacecrafts and stations can be provided for managing abnormal situations (Fig. 6).

In addition, within the platform, there should be implemented services for target planning for groups of various types of spacecrafts, services for mamaging of the spacecraft flight program, services for space-time control of spacecrafts, services for planning the use of individual elements of the ground stations and services for forming tasks for the target equipment. The platform should support organization of tasks redistribution in the spacecraft system in cases of unpredictable events of an abnormal situation and the need for unscheduled evasion from space debris. At the same time, additional services should be implemented for issuing recommendations on redistribution of spacecraft functions within the system (taking into account the technical capabilities of the system) and for issuing recommendations on the use of the ground stations for clarifying the spacecraft orbit in case of a dangerous encounter.

Another important issue in developments of the space traffic management is legal and regulatory framework. Since the space traffic management technology affects aspects of international cooperation, it is necessary to take into account not only the Russian GOST (State All-Union standard), but also international ISO, CCSDS standards, and documents of the Inter-Agency Space Debris Coordination Committee (IADC).

CONCLUSION

The objective of the developed approach is to create new opportunities for managing space traffic and resources of the mission control centers for a large number of spacecrafts with different owners.

The proposed space traffic management platform and eco-system of smart services will provide a comprehensive solution of the following tasks:

• continuous round-the-clock control of automatic spacecrafts in various orbits;

• cataloguing information on space debris in the near-Earth space;

• rapid identification of dangerous encounters;

• determination of the time and area of ground impact for space objects;

• coordinating the work planning for the ground stations and for spacecrafts of scientific, social and economic applications in order to exclude conflict situations and their optimal use;

• analysis of the use of the ground automated control complex for spacecrafts of scientific, social and economic applications;

• analysis of the status of the orbital group of spacecrafts of scientific, social and economic applications;

• provision of round-the-clock continuous control of the Russian Segment of the ISS RS;

• providing control of Transport Cargo Vehicles of the “Progress MS” and “Soyuz MS” types;

• ensuring the conduct of scientific experiments.

Currently, methods and tools for developing digital platform for control spacecrafts and and use of ground stations are under development.

The main requirement is to manage large-scale orbital groups of up to 40 spacecrafts at the existing ground stations including small, ultra-small and nano spacecrafts that will be formed in a self-organizing “swarm” or “cloud” –to make the Roskosmos orbital group more smart, open and flexible, scalable, efficient and reliable and also protect the spacecrafts from space waste and debris.

#### Russia wants to continue space coop with the U.S.

Michael Byers, Professor & Canada Research Chair, Department of Political Science, University of British Columbia, ‘19, Cold, dark, and dangerous: international cooperation in the arctic and space. Polar Record 55: 32–47.

Russia and Western states continued to cooperate in Space after the annexation of Crimea. The ISS has been functioning normally, with Western astronauts travelling there in Soyuz spacecraft. Indeed, since the annexation in March 2014, NASA has booked an additional seven seats on Soyuz and taken out options on three more (Grush, 2016; O’Kane, 2017). The Cospas-Sarsat Programme is functioning normally and Russian-made RD-180 engines are still being used to launch US intelligence and military satellites. Although plans to replace the RD-180 with a US-made engine gained impetus from the annexation of Crimea (Ferster, 2014), the replacement engine is still years away. In 2016, the US Congress approved the purchase of an additional 18 RD-180 engines: enough to last until 2022 (King & Troyan, 2016).

All three of the commercial launch services based on Russian–Western cooperation continued to operate after the annexation of Crimea. Since March 2014, 12 commercial launches for Western customers have taken place on Protons, 3 on Rockots, and 18 on Soyuz STs (Space Launch Report, n.d.). Russia and the United States continue to share some information on Space debris, with the US military remaining at the centre of this international cooperation (Henry, 2018). The two countries also continue to observe the ban on the deployment of nuclear weapons in Space and, notwithstanding President Donald Trump’s plans for creating a US Space Force, are refraining from testing anti-satellite weapons in ways that might create Space debris. As General John Hyten, the current head of US Strategic Command, stated in 2015:

Kinetic [anti-satellite weaponry] is horrible for the world … And to me, the one limiting factor is no debris. Whatever you do, don’t create debris. (Billings, 2015)

In 2017, Trump redirected NASA’s plans for human Space travel towards the Moon rather than Mars. NASA responded by proposing the Lunar Gateway, a Space station in cis-lunar orbit that would serve as a staging point for access to the Moon’s surface as well for deep Space missions (NASA, 2017). Later that year, NASA and Roscosmos issued a joint statement on cooperation in pursuit of this objective (Weitering, 2017).

Russia and Western states are also cooperating with regards to natural hazards in-and-from Space, including through the International Asteroid Warning Network, created in 2013 to facilitate cooperation between observatories and Space institutions in discovering, monitoring, and characterising potentially hazardous near-Earth objects (NEOs) (International Asteroid Warning Network, n.d.). Russia is similarly working with Western states in the Space Mission Planning Advisory Group, an association of national Space agencies that was established in 2014 to ‘prepare for an international response to a NEO threat through the exchange of information, development of options for collaborative research and mission opportunities, and to conduct NEO threat mitigation planning activities’ (European Space Agency, n.d.). Last but not least, Space weather (that is solar storms) has become another subject of Russian–Western cooperation through the recent establishment of expert and working groups within the United Nations system as part of the Space 2030 Agenda and UNISPACE+50 exercise (St. Pierre, 2017).

In short, both the United States and Russia are still cooperating in Space, and appear intent on continued cooperation. In April 2018, Russian President Vladimir Putin said:

Thank God, this field of activity is not being influenced by problems in politics. Therefore, I hope that everything will develop, since it is in the interests of everyone, in the interests of all humankind. ::: This is a sphere of activity that unites people. (President of Russia, 2018)

Reasons for Continued Cooperation

There are a number of reasons for continued Russian–Western cooperation in the Arctic and Space; reasons that overlap with each other. These reasons are not of equal importance; nor must they all be present for cooperation to occur.

The Arctic and Space are remote and extreme environments The first reason for continued cooperation concerns the ‘cold, dark, and dangerous’ characters of the Arctic and Space. In every region of the world, natural factors such as geography, climate, and the presence or absence of resources play a role in national interests and policy preferences. In the Arctic and Space, a combination of remoteness and extreme conditions makes almost any activity very expensive.

These high expenses, in turn, create an incentive for cooperation and burden-sharing. As Vladimir Putin said in 2010: If you stand alone, you can’t survive in the Arctic. Nature makes people and states to help each other. (Harding, 2010) Examples of how states cooperate to overcome remoteness, extreme conditions, and high expenses abound in the Arctic and Space. For instance, the states which contribute their satellites and ground stations to the Cospas-Sarsat Programme all obtain much greater coverage and therefore faster notification of distress signals than they could ever obtain on their own, given the high costs of building, insuring, and launching satellites. This then saves them money by taking the ‘search’ out of search and rescue—a matter of no small importance for the Soviet Union/Russia, the United States, Canada, and France, which created the CospasSarsat Programme and have some of the world’s largest maritime zones. Similarly, all the states involved in the ISS benefit scientifically and commercially from having a laboratory in micro-gravity (Rai et al., 2016). Yet the cost of building and operating such a large, multi-functional, and long-lasting Space station would be prohibitive for any single state, including the United States (Zimmerman, 2003).

States also have a shared interest in cooperation as an antidote against conflict, especially in remote and extreme environments where military preparations and activities can be punishingly expensive. The OSCE’s 1992 Treaty on Open Skies enabled the verification of arms control agreements. The Arctic Council was created, in large part, to foster communication, build confidence, reduce tensions, and thus help to prevent conflict in the post-Cold War period (English, 2013). The greatest accomplishment of the Arctic Search and Rescue Agreement may have been to regularise contact, and therefore confidence-building, among the militaries and coastguards of the eight Arctic states (Exner-Pirot, 2012). The creation of the Arctic Coast Guard Forum has carried this development further. In Space, one of the motivations for the Cospas-Sarsat Programme was to continue the cooperation and confidence-building that had developed—during the Cold War—as a result of the Apollo–Soyuz Project (Jamgotch, Knappet, & Carpio, 1988). In the 1990s, the same motivation led to Russia being invited to participate in the ISS as a full partner, despite the United States shouldering most of the cost. The recent inclusion of Russia as the United States’ primary partner in the Lunar Gateway is a continuation of this policy—taking collaborative, confidencebuilding steps that reduce tensions and thus help to prevent conflict.

### 2NC---China Coop CP---Solves Miscalc/Debris

#### The plan’s process is key – US-China dialogue builds experience working with each other – that solves crisis prevention and management

Grego 18 [Laura, Senior scientist in the Global Security Program at the Union of Concerned Scientists, Technical advisor for the Woomera Manual on the International Law of Military Space Operations project, Associate editor of Science and Global Security, delegate to the American Physical Society’s Panel on Public Affairs for the Forum on Physics and Society. “Space and Crisis Stability” 3-19-18 \*edited for clarity https://www.law.upenn.edu/live/files/7804-grego-space-and-crisis-stabilitypd]

The compressed timelines characteristic of crises combine with these ―use it or lose it pressures to shrink timelines. This dynamic couples dangerously with the inherent difficulty of determining the causes of satellite degradation, whether malicious or from natural causes, in a timely way. Space is a difficult environment in which to operate. Satellites orbit amidst increasing amounts of debris. A collision with a debris object the size of a marble could be catastrophic for a satellite, but objects of that size cannot be reliably tracked. So a failure due to a collision with a small piece of untracked debris may be left open to other interpretations. Satellite electronics are also subject to high levels of damaging radiation. Because of their remoteness, satellites as a rule cannot be repaired or maintained. While on-board diagnostics and space surveillance can help the user understand what went wrong, it is difficult to have a complete picture on short timescales. Satellite failure on-orbit is a regular occurrence19 (indeed, many satellites are kept in service long past their intended lifetimes). In the past, when fewer actors had access to satellite-disrupting technologies, satellite failures were usually ascribed to ―natural‖ causes. But increasingly, even during times of peace operators may assume malicious intent. More to the point, in a crisis when the costs of inaction may be perceived to be costly, there is an incentive to choose the worst-case interpretation of events even if the information is incomplete or inconclusive. Entanglement of strategic and tactical missions During the Cold War, nuclear and conventional arms were well separated, and escalation pathways were relatively clear. While space-based assets performed critical strategic missions, including early warning of ballistic missile launch and secure communications in a crisis, there was a relatively clear sense that these targets were off limits, as attacks could undermine nuclear deterrence. In the Strategic Arms Limitation Treaty, the US and Soviet Union pledged not to interfere with each other‘s ―national technical means‖ of verifying compliance with the agreement, yet another recognition that attacking strategically important satellites could be destabilizing.20 There was also restraint in building the hardware that could hold these assets at risk. However, where the lines between strategic satellite missions and other missions are blurred, these norms can be weakened. For example, the satellites that provide early warning of ballistic missile launch are associated with nuclear deterrent posture, but also are critical sensors for missile defenses. Strategic surveillance and missile warning satellites also support efforts to locate and destroy mobile conventional missile launchers. Interfering with an early warning sensor satellite might be intended to dissuade an adversary from using nuclear weapons first by degrading their missile defenses and thus hindering their first-strike posture. However, for a state that uses early warning satellites to enable a ―hair trigger‖ or launch-on-attack posture, the interference with such a satellite might instead be interpreted as a precursor to a nuclear attack. It may accelerate the use of nuclear weapons rather than inhibit it. Misperception and dual-use technologies Some space technologies and activities can be used both for relatively benign purposes but also for hostile ones. It may be difficult for an actor to understand the intent behind the development, testing, use, and stockpiling of these technologies, and see threats where there are none. (Or miss a threat until it is too late.) This may start a cycle of action and reaction based on misperception. For example, relatively low-mass satellites can now maneuver autonomously and closely approach other satellites without their cooperation; this may be for peaceful purposes such as satellite maintenance or the building of complex space structures, or for more controversial reasons such as intelligence-gathering or anti-satellite attacks. Ground-based lasers can be used to dazzle the sensors of an adversary‘s remote sensing satellites, and with sufficient power, they may damage those sensors. The power needed to dazzle a satellite is low, achievable with commercially available lasers coupled to a mirror which can track the satellite. Laser ranging networks use low-powered lasers to track satellites and to monitor precisely the Earth‘s shape and gravitational field, and use similar technologies. 21 Higher-powered lasers coupled with satellite-tracking optics have fewer legitimate uses. Because midcourse missile defense systems are intended to destroy long-range ballistic missile warheads, which travel at speeds and altitudes comparable to those of satellites, such defense systems also have inherent ASAT capabilities. In fact, while the technologies being developed for long-range missile defenses might not prove very effective against ballistic missiles—for example, because of the countermeasure problems associated with midcourse missile defense— they could be far more effective against satellites. This capacity is not just theoretical. In 2007, China demonstrated a direct-ascent anti-satellite capability which could be used both in an ASAT and missile defense role, and in 2009, the United States used a ship-based missile defense interceptor to destroy a satellite, as well. US plans indicated a projected inventory of missile defense interceptors with capability to reach all low earth orbiting satellites in the dozens in the 2020s, and in the hundreds by 2030.22 Discrimination The consequences of interfering with a satellite may be vastly different depending on who is affected and how, and whether the satellite represents a legitimate military objective. However, it will not always be clear who the owners and operators of a satellite are, and users of a satellite‘s services may be numerous and not public. Registration of satellites is incomplete23 and current ownership is not necessarily updated in a readily available repository. The identification of a satellite as military or civilian may be deliberately obscured. Or its value as a military asset may change over time; for example, the share of capacity of a commercial satellite used by military customers may wax and wane. A potential adversary‘s satellite may have different or additional missions that are more vital to that adversary than an outsider may perceive. An ASAT attack that creates persistent debris could result in significant collateral damage to a wide range of other actors; unlike terrestrial attacks, these consequences are not limited geographically, and could harm other users unpredictably. In 2015, the Pentagon‘s annual wargame, or simulated conflict, involving space assets focused on a future regional conflict. The official report out24 warned that it was hard to keep the conflict contained geographically when using anti-satellite weapons: As the wargame unfolded, a regional crisis quickly escalated, partly because of the interconnectedness of a multi-domain fight involving a capable adversary. The wargame participants emphasized the challenges in containing horizontal escalation once space control capabilities are employed to achieve limited national objectives. Lack of shared understanding of consequences/proportionality States have fairly similar understandings of the implications of military actions on the ground, in the air, and at sea, built over decades of experience. The United States and the Soviet Union/Russia have built some shared understanding of each other‘s strategic thinking on nuclear weapons, though this is less true for other states with nuclear weapons. But in the context of nuclear weapons, there is an arguable understanding about the crisis escalation based on the type of weapon (strategic or tactical) and the target (counterforce—against other nuclear targets, or countervalue—against civilian targets). Because of a lack of experience in hostilities that target space-based capabilities, it is not entirely clear what the proper response to a space activity is and where the escalation thresholds or ―red lines‖ lie. Exacerbating this is the asymmetry in space investments; not all actors will assign the same value to a given target or same escalatory nature to different weapons. For example, the United States is the country most heavily dependent on military space assets. Its proportionally higher commitment to expeditionary forces make this likely to be true well into the future. So while the United States seeks to create a deterrence framework, punishment-based deterrence would not likely target its adversary‘s space assets. But then there is difficulty finding target on the ground that would be credible but also not unpredictably escalate a crisis. If an American military satellite were attacked but without attendant human casualties (satellites have no mothers‘), retaliation on an adversary‘s ground-based target is likely to escalate the conflict, perhaps justifying the adversary‘s subsequent claim to self-defense, even if the initial satellite attack didn‘t support such a claim. Little experience in engaging substantively in these issues Related to this issue is that there is relatively little experience among the major space actors in handling a crisis with the others. The United States and the Soviet Union, then Russia, have had a long history of strategic discussions and negotiations. This built up a shared understanding of each other‘s point of view, developed relationships between those conducting those discussions, and created bureaucracies and expertise to support those discussions. This experience and these relationships are important to interpreting events and to resolving disputes before they turn into a crisis, and to managing [crisis] ~~one~~ once it begins. There is nothing like this level of engagement around space issues between these two states, and much less between the US and China. One of the participants in a 2010 US space war game, a diplomatic veteran, imagined25 how things would play out if one or more militarily important US satellites failed amidst a crisis with an adversary known to have sophisticated offensive cyber and space capabilities: The good news is that there has never been a destructive conflict waged in either the space or cyber domains. The bad news is that no one around the situation room table can cite any history from previous wars, or common bilateral understandings with the adversary, relating to space and cyber conflict as a guide to what the incoming reports mean, and what may or may not happen next. This is the big difference between the space-cyber domains, and the nuclear domain. There is, in this future scenario, no credible basis for anyone around the president to attribute restraint to the adversary, no track record from which to interpret the actions by the adversary. There is no crisis management history: the president has no bilateral understandings or guidelines from past diplomatic discussions, and no operational protocols from previous incidents where space and cyber moves and counter-moves created precedents. Perhaps the adversary intended to make a point with one series of limited attacks, and hoped for talks with Washington and a compromise; but for all the president knows, sitting in the situation room, the hostile actions taken against America‘s space assets and information systems are nothing less than early stages of an all-out assault on US interests. Where to start? How to prioritize efforts Using this lens, what does this say about where efforts around space security should be focused? Start a substantive, high-level arms control discussion Starting a credible high-level discussion will require countries to identify key domestic stakeholders, assemble teams of experts on relevant issues, and develop detailed policy positions. The resulting informed dialogue will increase understanding between countries, identify important areas of agreement and disagreement, clarify intentions, and establish better channels of communication.

#### That solves global SSA coop

Zenko 14 [Micha, Douglas Dillon fellow in the Center for Preventive Action at the Council on Foreign Relations. “Dangerous Space Incidents: Contingency Planning Memorandum No. 21” 4-16-14 https://www.cfr.org/report/dangerous-space-incidents]

An ASAT test that causes unintended damage to U.S. and ally satellites or an accident in space caused by debris could trigger a major international crisis between the United States and China. The risk is heightened by the fact that both countries have no pre–space-launch notification arrangements, similar to the U.S.-Russia agreement on notifications of intercontinental ballistic missile (ICBM) and submarine-launched ballistic missile (SLBM) launches. Management of such a crisis could also be hindered by a lack of direct communication between U.S. authorities and the PLA agency that oversees Chinese military space launches. Warning Indicators As China, North Korea, and Iran's space capabilities continue to grow, the following strategic and tactical warning indicators would suggest that a dangerous space event is forthcoming. Strategic warning indicators include statements of intention to interfere with or develop the capability to interfere with space operations of other powers during a crisis or wartime; evidence of such intent, including research and development or budget indicators, organizational changes, or intelligence collection; noticeably increased efforts to disrupt space communications using lasers or jammers against satellites or ground-based transmitters; or the sudden and unexplained launch of additional satellites into LEO, accompanied by an increase in aggressive or potentially hostile maneuvers. Certain indicators are suggestive of potential military escalation or onset of conflict. These include a heightened diplomatic crisis involving the United States and China, North Korea, or Iran that could result in terrestrial military escalation and trigger a crisis-related interference in space; militarized tensions or direct conflict between one of the three countries and the United States, a U.S. treaty ally, or a non-U.S. ally with known space capabilities, such as India or Russia; or an internal power struggle among governing elites in China, North Korea, or Iran, prompting space activities intended to consolidate domestic power or stoke nationalism. Tactical warning indicators tend to be more overt. They include significant changes in the alert status or operational readiness of military units associated with China, North Korea, or Iran's missile or space programs; the unexpected announcement of the closure of airspace to civilian aircraft over the territory of previous space launches; or preparations for missile tests from satellite launching stations which are usually detectable days, if not weeks, in advance. Space launches from road-mobile missile units, although closely monitored, would likely occur with less warning, if any. Additional indicators include specific space-related warnings or rhetoric, or the declaration of an antisatellite or ballistic missile defense test, although no warning would be issued. The 2007 Chinese ASAT test that destroyed an LEO satellite was not preceded by any specific warnings. Implications for U.S. Interests The United States has three primary national interests in preventing or mitigating the dangerous space contingencies detailed above, which would threaten U.S. or allied space assets and produce mass space debris, imperiling assured access to space. First, the United States depends on space systems more than any other country, which is unlikely to change in the future. No other state spends as much on its space activity (75 percent of global space funding is by the United States), or has a greater stake in a safe and secure space (43 percent of all active satellites are U.S. owned). Threats to U.S. satellites would reduce the country's ability to attack suspected terrorists with precision-guided munitions and conduct imagery analysis of nuclear weapons programs, and could interrupt non-cash economic activity depending on the severity of the attack and number of satellites disrupted. Moreover, although space debris threatens all international space assets, the United States depends especially on satellites in the portions of LEO where the greatest debris is found for encrypted communications, reconnaissance over Afghanistan, missile defense, and other missions critical to national security. Second, as the most active global security manager with unmatched commitments, the United States would be more affected by an unstable or insecure space commons than any other country. In January 2012, the Obama administration announced its commitment to help broker an International Code of Conduct on Outer Space Activities, which would be an informal arrangement based on freedom of access to space for peaceful purposes, preservation of the security and integrity of space objects in orbit, and due consideration for the legitimate defense interests of states. Third, as the primary guarantor of space access, the United States has a strong interest in promoting responsible behavior in space or at least preventing space activities that have the potential to become a source of international instability or potential conflict, in space or on the ground. Intentional or crisis-related interference in space would undermine the norm of equal access to space for all by introducing space as a domain for crisis bargaining, as well as prompting its further militarization—both of which would be highly destabilizing to international political dynamics. The U.S. Strategic Command's Joint Space Operations Center (JSpOC) helps to protect the space domain by providing conjunction assessment notifications to government and commercial space operators when their satellites are predicted to collide with other satellites or space debris. JSpOC gathers this information with its "space fence" of ground-based radars and optical sensors located throughout the world. Threats to military or civilian satellites could limit the timely and accurate information available to civilian decision-makers and military commanders during crisis situations. This is compounded by how difficult it would be for officials to quickly interpret whether a satellite malfunction was caused intentionally or inadvertently by humans, a damaging space phenomenon (such as solar flares), or routine mechanical failure. Attributing who or what is responsible for such a disruption in space is usually possible, but requires equipment, analysts, and time—all of which may be in short supply during a crisis. This situation could also create a first-strike incentive for U.S. decision-makers seeking to act before its understanding of a terrestrial dispute or its space situational awareness—the ability to view, characterize, and predict the location of manmade objects in space—is interrupted or further degraded. Preventive Options The United States has several unilateral, bilateral, and multilateral options for preventing dangerous space events most detrimental to U.S. interests. In addition to taking further steps to improve the survivability and redundancy of U.S. space assets and enhance its ability to detect dangerous space activities and debris, the United States could undertake other unilateral measures, such as declaring a moratorium on all ASAT testing to pressure other states to do the same. The United States could also promote a nontreaty prohibition of direct ascent ASAT tests. However, given that this would limit the operational requirements of mid-range U.S. ballistic missile defenses, such an agreement would be infeasible because of intense domestic political opposition. Moreover, while an ASAT and direct ascent ASAT ban would be beneficial to U.S. security, it is unlikely that China, North Korea, or Iran would agree to, let alone abide by, such agreements. Additionally, emerging space powers, such as Russia and India, may prioritize the development of space capabilities in an effort to match those of other space powers. The United States could issue clear and specific public warnings to deter malicious activity in space. As of yet, U.S. deterrent threats are confined to Pentagon planning documents, or have been applied with little specificity to cyber and space domains contemporaneously. If the space event was detected during the planning stage by the U.S. intelligence community, or it became clear that a country developing space capabilities intended to use them maliciously and the resultant space debris could be predicted by JSpOC, the United States could publicize the costs that such debris would pose to the world's satellites in an attempt to marshal international condemnation to prevent it. Military options to deter impending actions, or respond if necessary, include deploying naval assets toward a potential adversary, placing regionally based bombers on high-alert status, attempting to intercept a space launch with the sea-based Aegis ballistic missile defense system (a near impossibility for far inland China launches), or attempting to preemptively strike the space launch platform with long-range bombers or conventionally armed ballistic missiles. Though the United States possesses advanced direct ascent ASAT capabilities, employing them against Chinese, North Korean, or Iranian space systems would signal that such acts were normal behavior and create space debris threatening to U.S. space assets. Beyond these unilateral options, the United States could issue private demarches to warn and educate China, North Korea, or Iran of the consequences of a direct ascent or co-orbital ASAT test. The United States could initiate trust-building measures with specific countries to reduce the risk of inadvertent conflict. For example, U.S. officials could work with Chinese military leaders to establish rules of the road for space, such as announcing space launches and implementing emerging industry standards for debris mitigation, which could be included as part of the U.S.-China military discussions on common understandings for international airspace, the open seas, and cyberspace. Currently, no legal or nonbinding instruments governing outer space exist other than the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space. U.S. diplomats could also request greater clarity from North Korea and Iran about the intent of their space activities. Multilaterally, the United States could continue to develop and promote bilateral and multilateral transparency and confidence-building measures in outer space, expanding on the UN Group of Governmental Experts' roadmap published in July 2013. This would include information exchanges and notifications, consultative mechanisms, shared space situational awareness, and the publication of national space policies. Likewise, the United States could seek to advance discussions in the UN Committee on the Peaceful Uses of Outer Space, which is developing best practices for space debris and collaborative space situational awareness.

### 2NC---China Coop CP---Solves Space Weather

#### SSA coop with China spills over to other space engagement and space weather

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The U.S.-China relationship in space has the potential to be a stable foundation for a stronger overall relationship between the two countries. Space was arguably a stabilizing element in the relationship between the United States and Soviet Union during the Cold War by providing national capabilities to reduce tensions and an outlet for collaboration. Although the future of the U.S.-China relationship will be characterized by both competition and cooperation, taking concrete steps to stabilize relations in space can be part of the solution to avoiding the “Thucydides trap,” where an established power’s fear of a rising power leads to conflict.

The Role of Space in the U.S.-China Relationship

Space is a critical domain to the security of the United States. Space capabilities enable secure, hardened communications with nuclear forces, enable the verification and monitoring of arms control treaties, and provide valuable intelligence. Such capabilities are the foundation of the United States’ ability to defend its borders, project power to protect its allies and interests overseas, and defeat adversaries. The space domain, however, is currently experiencing significant changes that could affect the United States’ ability to maintain all these benefits in the future. A growing number of state and nonstate actors are involved in space, resulting in more than 1,200 active satellites in orbit and thousands more planned in the near future. Active satellites coexist in space along with hundreds of thousands of dead satellites, spent rocket stages, and other pieces of debris that are a legacy of six decades of space activities. As a result, the most useful and densely populated orbits are experiencing significant increases in physical and electromagnetic congestion and interference.

Amid this change, China is rapidly developing its capabilities across the entire spectrum of space activities. It has a robust and successful human spaceflight and exploration program that in many ways mirrors NASA’s successes in the 1960s and 1970s and is a similar source of national pride. Although it still has a long way to go, China is developing a range of space capabilities focused on national security that one day might be second only to those of the United States. Some of China’s new capabilities have created significant concern within the U.S. national security community, as they are aimed at countering or threatening the space capabilities of the United States and other countries.

The massive changes in the space domain and China’s growing capabilities have affected the U.S.-China relationship in space. There is growing mistrust between the two countries, fueled in part by their development and testing of dual-use technologies such as rendezvous and proximity operations and hypervelocity kinetic kill systems. This mistrust is compounded by a misalignment in political and strategic priorities: China is focused on developing and increasing its capabilities in the space domain, whereas the United States is focused on maintaining and assuring access to its space capabilities.

Recommendations for Managing Tensions and Promoting Positive Engagement

Despite these challenges and concerns, there are concrete steps that the United States and China can take to manage tensions and possibly even work toward positive engagement. In 2011, President Barack Obama and then Chinese president Hu Jintao issued a joint statement on strengthening U.S.-China relations during a visit by President Hu to the White House. As one of the steps outlined in the statement, the two presidents agreed to take specific actions to deepen dialogue and exchanges in the field of space and discuss opportunities for practical future cooperation.

President Xi Jinping’s upcoming visit presents an opportunity to build on the 2011 agreement and take steps toward these goals. The first step should be to have a substantive discussion on space security. President Obama should clearly communicate the importance that the United States places on assured access to space, U.S. concerns with recent Chinese counterspace testing, and the potential negative consequences of any aggressive acts in space. Both countries should exchange views on space policies, including their interpretations of how self-defense applies to satellites and hostile actions in space. Doing so can help avoid misunderstandings and misperceptions that could lead either country to unwittingly take actions that escalate a crisis.

Second, Presidents Obama and Xi should discuss specific ideas for cooperation in civil and scientific space activities and the use of space for peaceful applications on earth. Continuing to exclude China from civil space cooperation will not prevent it from developing its own capabilities; this approach will only ensure that China cooperates with other countries in space in a way that advances its own national interests and goals. Space weather, scientific research, exploration, capacity building for disaster response, and global environmental monitoring are all areas where the United States and China share joint interests and could collaborate with each other and other interested countries to help establish broader relationships outside the military realm.

In addition, the United States should take steps on its own to stabilize the relationship. First and foremost, it should get serious about making U.S. space capabilities more resilient. Increasing resilience would support deterrence by decreasing the benefits an adversary might hope to achieve and also help ensure that critical capabilities can survive should deterrence fail. While resilience has been a talking point for the last few years, the United States has made little progress toward achieving the goal. Radical change is thus needed in how Washington develops and organizes national security space capabilities. Moreover, the United States should embrace commercial services to diversify and augment governmental capabilities, while encouraging allies to develop their own space capabilities.

Second, the United States should continue to bolster the transparency of space activities by increasing the amount of space situational awareness (SSA) data available to satellite operators and the public. Greater transparency reinforces ongoing U.S. and international initiatives to promote responsible behavior in space and also helps mitigate the possibility for accidents or naturally caused events to spark or escalate tensions. Shifting responsibility for space safety to a civil agency that can share and cooperate more easily with the international community and working with the international community to develop more publicly available sources of SSA data outside the U.S. government are two steps that would enhance trust, improve data reliability, and reinforce norms of behavior.

The consequences of not addressing the current strategic instability in space are real. A future conflict in space between the United States and China would have devastating impacts on everyone who uses and relies on space. Both the United States and China have acknowledged the dangers of outright conflict and have pledged their interest in avoiding such an outcome. Taken together, the initial steps outlined here could help stabilize the U.S.-China strategic relationship in space, mitigate the threat of the worst-case scenario, and work toward a more positive outcome that benefits all.

#### **China’s satellite data is uniquely key to advanced space weather forecasting**

Aghajanian 12 [Liana Aghajanian, journalist, citing Dr. Rainer Schwenn, one of the developers of KuaFu; Dr. William Liu, a senior scientist at the Canadian Space Agency; the 2008 National Academy of Sciences Report; May 14, 2012. “Cloudy With a Chance of Catastrophe: Predicting the Weather in Space.” http://mentalfloss.com/article/30665/cloudy-chance-catastrophe-predicting-weather-space]

In 1859, while observing sunspots, a young astronomer named Richard Carrington recorded a geomagnetic storm so powerful, the electrical currents it sent to Earth were enough to keep the newly invented telegraph operating without a battery. Centuries later, though humans have sent robots to Mars and even strong-armed a couple engineers into walking on the moon, the science of space weather, the changing environmental conditions in near-Earth space, has largely managed to elude us. In fact even the term “space weather” is new; it wasn’t used regularly until the 1990s. Now, an international project led by China is hoping to advance the study of space weather by light-years in order to minimize the dangerous impact a storm in space might have on us fragile Earthlings. If experts are correct, there's a chance that a serious space weather threat will arrive sooner rather than later – and the risk to humans is greater than you think. Oddly, the trouble is that we’ve become too advanced. Because humans today are so dependent upon modern electrical technology, a space storm the size of the one Carrington recorded in 1859 could cause catastrophic problems if it occurred tomorrow. According to a 2008 National Academy of Sciences Report, from long-term electrical blackouts to damage to communication satellites and GPS systems (not to mention billions in financial losses), the results could be devastating worldwide. Luckily, scientists are hopeful the KuaFu project will prevent (or at least minimize the impact of) this kind of disaster. Our Eyes on the Sun, The Sun in Our Eyes Named for Kua Fu, a sun-chasing giant from a Chinese folktale whose pursuit to tame the brightest star in our solar system ended after he died of thirst, the KuaFu project will create a space weather forecasting system 1.5 million kilometers from the Earth's surface. The goal is similar to the one from the legend: to observe changes in solar-terrestrial storms, investigate flows of energy and solar material, and improve the forecasting of space weather. Not necessarily to tame the sun, but, at least, to understand it. Proposed in 2003 by scientist Chuanyi Tu from the Chinese Academy of Sciences, the project will place three separate satellites at strategic points in our solar system to observe the inner workings of space weather. China's National Space Administration along with the European and Canadian Space Agencies will work together to man them. “Being aware of the impending blindness to space weather and its effects, we consider a mission like KuaFu absolutely mandatory,” said Dr. Rainer Schwenn, one of the developers of KuaFu. “If 'space weather' keeps being considered an important science goal, then KuaFu is a real key project.” The satellites will offer an unprecedented ability to glean information about the often tumultuous relationship between the sun and Earth, by allowing scientists to observe both the star and its effects on the planet simultaneously. To now, this process has been viewable only via computer simulation. “You have to look at the two systems simultaneously [to most accurately forecast space weather]” said Dr. William Liu, a senior scientist at the Canadian Space Agency who took over as project leader when Chuanyi Tu retired two years ago. “It's a real observation; it's what's actually happening.” Space Storm Showdown: What Do We Do? So, if the power-grid frying, billion dollar damage-wreaking storm is inevitable, how much will forecasting it actually help? Lots. According to Liu, predicting space weather activity can give the operators who maneuver satellites in space the information they need to protect them and us from harm. For example: If companies know a storm is approaching, it gives them a chance to tweak their loads before their systems descend into chaos and shut off power for, say, the entire East Coast of the United States. “That's how you prevent catastrophe,” Liu explained. “You reduce the load on the parts that are more sensitive.” While the project was originally scheduled to be completed this year, Liu’s current estimates put its debut at 2016. Despite the delays, he remains optimistic it will come to fruition, pointing out that international collaborations like this one often stir up scientific and financial challenges that delay the launch process. Whether the KuaFu project will be able to predict space weather accurately all of the time is up for debate. Liu, however, is confident that, at the very least, it's a step toward that direction . “With this launch and operation, we'll make our predictions better. Whether it will be 100 percent, that will be too much to ask, but it will definitely improve our knowledge.”

## Disads

### 1NC---DoD DA---Link

#### It’s expensive.

GlobalCom, ND (GlobalCom, ND, accessed on 6-24-2022, “The Cost of Building and Launching a Satellite”, <https://globalcomsatphone.com/costs/#:~:text=It%20is%20estimated%20that%20a,and%20send%20them%20into%20orbit>., HBisevac) \*\*edited in brackets\*\*

Satellites are **not** **cheap** business. They cost a lot of money to design, construct, launch and monitor. Just how much money? If you have at least $290 million in your bank account, that money can go into making a satellite that can track and monitor hurricanes. Add about $100 million dollars more if you want a satellite that carries a missile-warning device.

What makes satellites so expensive?

Some of the factors that drive the cost of satellites are the **equipment** and **materials** used to **build them**. Transponders alone hundreds of thousands of dollars a year to maintain, while bandwidth cost per MHz is priced at a minimum of about $3,500 a month. Running a satellite at a 36MHz bandwidth will cost over **$1.5 million a year**. There are also the other gadgets and equipment that have to be built into the satellite in order for it to perform its intended function. These can include computers, computer software and cameras.

Another factor that contributes to the expense associated with satellites is the cost of putting one into orbit. It is estimated that a single satellite launch can range in cost from a low of about $50 million to a high of about **$400 million**. Launching a space shuttle mission can easily cost **$500 million** dollars, although one mission is capable of carrying multiple satellites and send them into orbit.

Also to be considered in the cost of satellites is its **maintenance**. After getting one into orbit, it has to be **monitored** from a ground facility, which will require ~~manpower~~ [**peoplepower**]. Satellites are also not impervious to damage or down times. Furthermore, if things don’t go too well during a launch, a **multi-million endeavor** can either end up in pieces or sustain damages that will cost **more money** to repair.

#### Consumes massive resources.

* also has AFF solvency deficits!

Kedar Pavgi, 14 (Kedar Pavgi is an M.A. candidate at Johns Hopkins University's School of Advanced International Studies, 1-14-2014, accessed on 6-24-2022, Defense One, “It's Becoming Too Expensive for the Military to Go Into Space”, <https://www.defenseone.com/technology/2014/01/its-becoming-too-expensive-military-go-space/76772/>, HBisevac)

Launching military assets into space – a “core element of national security” – is becoming **too expensive** and bureaucratic and could render the Pentagon’s space program “ineffective,” warns the director of the Defense Advanced Research Projects Agency.

"I think we're in the middle of a self-inflicted surprise in some senses in space today, it’s a very different kind of surprise but it’s one that is rendering us ineffective and putting us in a place where we simply cannot afford to be," DARPA Director Arati Prabhakar said Monday at the American Institute of Aeronautics and Astronautics SciTech 2014 conference.

Per-launch costs have soared into the **tens of millions** of dollars, and take **years** to **plan** and **execute**. The biggest barriers to cost-effective military spaceflight: a **shortage** of **launch locations**, and an inability to use **existing infra**structure and **takeoff points**.

"There's also something going on inside the national security community in space that's actually quite troubling,” Prabhakar said. “That has to do with how slow and costly it is for us today to do anything we need to do on orbit for national security purposes.

Prabhakar said the agency is investing in programs like the Airborne Launch Assist Space Access program, which could bring the price of taking cargo into outer space down from $30,000 a pound to $10,000. The agency is working with scientists and engineers to make the construction and maintenance of satellites more cost-effective.

“As we develop those capabilities at [geosynchronous orbit], we believe we’re going to start **changing** the fundamental dynamics, and the **economics**, of what’s going to be possible with **satellite capability**,” Prabhakar said.

### 1NC---Intel/NSA DA---Link

#### NATO SSA expansion causes U.S intel community backlash.

Theresa Hitchens, 4-29 (Theresa Hitchens is the Space and Air Force reporter at Breaking Defense and a senior research associate at the University of Maryland’s Center for International and Security Studies at Maryland, 4-29-2022, accessed on 6-23-2022, Breaking Defense, “NATO considers buying commercial imagery, irking US spy sat agencies”, <https://breakingdefense.com/2022/04/nato-considers-buying-commercial-imagery-irking-us-spy-sat-agencies-sources/>, HBisevac) NRO = National Renaissance Office, NGA = National Geospatial-Intelligence Agency

GEOINT 2022: NATO is mulling a new, and somewhat surprising, effort to directly **buy imagery** from commercial providers in a move that industry sources say appears to have irked the **US spy satellite agencies** that have **traditionally** filled that **role**. Interested companies have until the close of business today to respond to NATO’s request for information (RFI).

Alliance member nations, too, have been asked to identify “**emerging** and/or existing” **remote sensing capabilities** that could help **NATO’s military command** produce “imagery intelligence,” or IMINT. IMINT is provided primarily by satellites, as well as by aerial photography.

The US is the largest operator of **military** intelligence, surveillance and reconnaissance (**ISR**) satellites, and is **outwardly supportive** of the effort, which an IC official said could improve NATO’s production of geospatial intelligence (GEOINT) products.

“We want NATO to produce timely, relevant, and trusted GEOINT that can be easily shared with the Alliance, and we work with NATO towards that end,” Melissa Planert, deputy director for international affairs at the National Geospatial-Intelligence Agency (**NGA**), said in an email.

“NGA’s position is that we also strongly recommend NATO seek diverse imagery sources, products and services from across the Alliance and from commercial vendors,” she added. “A diverse selection of imagery and analysis providers will only benefit GEOINT contributions to NATO intelligence requirements, and strengthen NATO policymakers’ understanding of the complex security situation.”

NGA is responsible — in its role as GEOINT functional manager and a combat-support agency for the Defense Department — for providing imagery and ISR analytics to military commanders, including at NATO. NGA collects satellite imagery from the National Reconnaissance Office and US and selected foreign commercial providers.

In fact, one NGA official told Breaking Defense that the NATO RFI was spurred by concerns from allied military officials that budget cuts to the agency might affect their ability to receive timely US imagery and support.

But despite Planert’s assurances, industry sources said they’ve felt the US Intelligence Community is much **less receptive** to the idea of NATO using its **collective budget** to acquire commercial imagery and **analytical services**.

One industry official said that for **NGA** and NRO, “it’s **all about control**” of the information.

Exploratory First Step

The RFI was issued last month [PDF] by Headquarters Supreme Allied Commander Transformation (HQ SACT), based in Norfolk, Va. SACT is one of only two NATO strategic commands, and is responsible for research, development and acquisition of new technology. French Gen. Philippe Lavigne was appointed as commander this past September.

A SACT spokesperson told Breaking Defense in an email that the RFI doesn’t represent a formal bidding process, rather is a first information-gathering step.

“The purpose of this RFI is to involve industry/academia and Nations, through collaboration, in an examination of current and future capabilities. This is the exploratory phase of the process and does not represent a commitment to acquire any such services,” the spokesperson wrote. “NATO looks forward to working with industry/academia and Nations to ascertain if they possess prospective products, systems or sub-systems that will then help inform NATO’s capability development decision-making process.”

It is unclear that if a decision is made to institute a formal procurement whether it would be the first time NATO has sought to collectively purchase its own IMINT.

The SACT spokesperson said that the NATO commands have worked with commercial imagery providers in the past during exercises. Further, Allied Command Transformation (ACT) “regularly works with nations and industry to identify prospective products that would support capability development in various fields.” However, the spokesperson was unable to confirm by press time whether there had ever been a formal acquisition program.

NATO only in 2019 declared space a legitimate operational domain, and in January this year finally released a first-ever alliance space policy. That policy calls on allies to voluntarily ensure compatibility among their national space assets, while pledging members to develop collective requirements and the means of fulfilling them — including the use of commercial capabilities.

Alliance commanders do have access to remote sensing imagery provided by member states. However, besides the US, only a handful of the 29 allied nations operate remote sensing satellites, military or commercial. According to a study [PDF] by CNA’s China Aerospace Studies Institute, US allies own or operate only a total of 69 remote sensing sats. Germany operates the most, with 16 birds. By contrast, US national security and commercial operators have more than 500.

Thus, the US is the primary provider of space-based ISR to NATO — although there have historically been problems with sharing images and analysis based on data from uber-classified spy-sats. This is one reason why there has been a public push by top military commanders to declassify space capabilities.

Indeed, in the run up to Russia’s invasion of Ukraine, it took a decision by President Joe Biden himself to release imagery of the conflict from US spy satellites, Ronald Moultrie, DoD undersecretary for intelligence and security, told the USGIF GEOINT 2022 symposium near Denver this week. This includes pushing US commercial firms to provide Ukraine’s government, and release to the global public, their own imagery of Russian military actions, which have reportedly included human rights violations.

“That decision was not taken lightly,” he said. Rather, it was a “gutsy decision to say: ‘We are going to disclose some of the most insensitive, sensitive intelligence that we have, but it’s important enough for us to do.'”

Mixed Messages From The IC?

A number of industry sources told Breaking Defense in the run up to and during the GEOINT conference that IC officials were resistant to the concept of NATO using its collective funds to buy commercial imagery, rather than simply **rely** upon that provided by **NGA**/**NRO** and other NATO members. These sources said that IC officials were instead pushing NATO not to move ahead with a formal acquisition.

“**NRO** wants **everything** to **go through them**,” one company rep said bluntly.

### 2NC---PTX DA---Link

#### GOP loathes wasting money on Satellites

**Romm 11** – climate science and policy reporter and founding editor of ClimateProgess (Joe, “GOP cut crucial weather satellites with fierce hurricane season looming,” Think Progress, 5-23-11,https://archive.thinkprogress.org/gop-cut-crucial-weather-satellites-with-fierce-hurricane-season-looming-e7f7efdabb1f/) //sg

Earlier this year, Congressional Republicans decided accurate weather forecasting and hurricane tracking were services the American people could live without. The GOP-sponsored 2011 spending bill **slashed the budget for** the National Oceanic and Atmospheric Administration, slashing $700 million targeted for an overhaul of the nation’s aging environmental **satellite system**. NOAA scientists have stated unequivocally the existing satellites will fail and if they aren’t replaced, the agency’s ability to provide life-saving information to the American people will be compromised. Jane Lubchenco, NOAA administrator, told reporters yesterday that the agency’s hurricane outlook last year was “spot-on” and cautioned that “not having satellites and applying their latest capabilities could spell disaster”:

#### Congress frustrations with Space Force spur backlash to the plan

Erwin 22 – Space technology reporter for Space News (Sandra, “Congress gives DoD more money for space, with caveats,” Space News, 3-13-22, <https://spacenews.com/congress-gives-dod-more-money-for-space-with-caveats/>) //sg

House appropriators, for example, had **previously withheld funding for the Space Warfighting Analysis Center (SWAC),** an organization created to design the military’s space architecture using digital models and simulations. The 2022 bill approved the $37 million DoD requested for SWAC but warns that “concerns persist that the analytical and **decision-making process within the Space Force is overly complex and convoluted.**”

In a report accompanying the defense spending bill, Congress asks for “clarification of the roles and responsibilities of senior civilian and uniformed leaders with space responsibilities” and for an explanation of what space acquisition units do, including the SWAC, Space Development Agency, Space Rapid Capabilities Office, and space programs in the Department of the Air Force Rapid Capabilities Office.

Congress also appears **frustrated by the Space Force’s old-school approaches** to buying new systems that don’t take advantage of commercial innovations in areas like communications, space domain awareness, and intelligence, surveillance, and reconnaissance.

DoD and the Space Force “have publicly championed a hybrid space architecture that includes a combination of government and commercial space vehicles and services,” the bill says, but the Space Force has been slow to prioritize commercial offerings in its architecture. Congress asks DoD to submit a “strategy to integrate commercial satellites across its mission sets.”