



COUNTERING THE U.S. THIRD OFFSET STRATEGY:

Russian Perspectives, Responses and Challenges

Policy Report
January 2017

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CHALLENGES**

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EXECUTIVE SUMMARY

The U.S. defence community is currently debating a range of capability requirements and top priority investments that will shape U.S. strategy and the use of force in the 21st century. Embedded in a broader conceptual umbrella of the Third Offset Strategy, the U.S. Department of Defence (DOD) seeks to develop technologically enabled novel operational and organisational constructs. This would sustain U.S. military superiority over its capable adversaries at the operational level of war, thereby strengthening conventional deterrence. At the same time, the Third Offset strategy aims to revamp institutional agility in U.S. defence management to succeed in a dynamically evolving operational environment. By speeding up the implementation of organisational and conceptual innovation, a strategic technological advantage is sustainable. Strategic effectiveness of the Third Offset, however, will not only depend on the institutional agility and adoption capacity – the financial intensity and organisational capital required to adopt military innovations, but will also depend on the responses, resources, and counter-innovations by peer competitors. Notwithstanding the diffusion and convergence of novel technologies - electronic miniaturisation, additive manufacturing, nano-technology, artificial intelligence, space-like capabilities, and unmanned systems that are likely to alter the character of conflict over time, the patterns of “challenge, strategic response, and adaptation” will continue to shape the direction and character of long-term strategic competitions.

Accordingly, this report aims to ascertain the evolving contours of the Russian strategic thought and responses toward the Third Offset strategy. It argues that while the U.S. Third Offset is a recent development, its core technological initiatives have been a significant cause of concern for Russia for a long time. In this context, Russian responses to counter these initiatives consist of two major elements: The first one is ‘countering the Third Offset Strategy with the First Offset Strategy’, which means prioritising the development of a wide array of both strategic and tactical nuclear weapons systems. For Russia, maintaining a sophisticated arsenal of nuclear weapons can effectively offset conventional military innovations of the U.S., NATO, and China. The second element of the response strategy is more ambitious, and carries greater technological risks. Russia began to counter many U.S. technological initiatives via similar indigenous programs, although more narrowly focused and smaller in scale. In October 2012, Russia established the Advanced Research Foundation (ARF) – a counterpart to the U.S. DARPA. The ARF focuses on similar areas such as the Third Offset Strategy, including hypersonic vehicles, artificial intelligence, additive technologies, unmanned underwater vehicles, cognitive technologies, directed energy weapons, and others. Although in some programmes, Russian military research and development are at initial stages relative to the U.S., in other areas such as directed energy weapons, rail gun, hypersonic vehicle; unmanned underwater vehicle programmes are progressing into advanced stages. The key challenge for Russia, however, is a sustained resource allocation to translate these disruptive innovations into actual military capabilities.

INTRODUCTION

What is the Third Offset Strategy?

The Third Offset Strategy emerged in the 2014 Defence Innovation Initiative, which was announced by then-Secretary of Defence Chuck Hagel.¹ Hagel viewed the DII as a comprehensive effort for the U.S. defence community to search for innovative ways to sustain and advance U.S. military superiority for the 21st century. This is an era where U.S. dominance in key warfighting domains has been eroding, while facing constrained and uncertain budgets. “History is instructive on this 21st century challenge. The U.S. changed the security landscape in the 1970s and 1980s with networked precision strike, stealth, and surveillance for conventional forces. We will identify a third offset strategy that puts the competitive advantage firmly in the hands of American power projection over the coming decades.”² The DII called for a revamped institutional agility that would accelerate U.S. military innovation in select linked areas, including leadership and defence management, long-range research and development programmes. By identifying, developing, and fielding breakthrough technologies, this would produce a reinvigorated war-gaming effort to develop and test alternative ways of achieving strategic objectives and novel operational concepts to employ resources to greater strategic effects.³ The outgoing Secretary of Defence Ashton Carter has built on Hagel’s vision of the Third Offset Strategy. He has conducted numerous “small bets” on advanced capability research and demonstrations, while working to craft new operational concepts so that the next administration can determine capability requirements and top priority investments that will shape U.S. military strategy in the 21st century. Carter has directed Deputy Secretary of Defence Robert Work to oversee this effort. In his numerous presentations and talks, Work has emphasised that the Third Offset Strategy represents “technologically enabled operational and organisational constructs that provide the joint force an advantage - primarily at the operational level of war, but also the tactical - thereby strengthening conventional deterrence.”⁴

U.S. defence officials have cautioned that the Third Offset Strategy does not aim at any specific peer competitor (i.e. Russia, China). The strategy’s underlying assumption is that the diffusion of advanced military technologies in emerging

¹ Timothy Walton, “Security the Third Offset Strategy - Priorities for the Next Secretary of Defence,” *Joint Forces Quarterly*, 82, no.3, (2016):6-15.

² Chuck Hagel, “Memorandum - The Defence Innovation Initiative,” Office of the Secretary of Defence, November 15, 2014. Available at: <http://www.defense.gov/Portals/1/Documents/pubs/OSD013411-14.pdf>.

³ *Ibid.*

⁴ Cheryl Pellerin, “Deputy Secretary Discusses Third Offset, First Organizational Construct,” *Department of Defence News*, September 21, 2016. Available at: <http://www.defense.gov/News/Article/Article/951689>.

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domains of warfare – space, near-space, cyber-space, and underwater by peer competitors, challenges the U.S. freedom of action and operational effectiveness in potential future conflicts or crises. Specifically, the diffusion and regional coverage of advanced anti-access/area denial (A2/AD) battle networks – sensors, command, control, and communications, and weapons constrains U.S. forces' ability to maintain localised air, maritime, space and cyber-space superiority and security, in addition to the ability to conduct cross-domain operations and manoeuvre in select contested areas.⁵

These concerns are valid in the context of the accelerating trajectory and character of China's military modernisation and its regional power-projection. These issues are particularly prominent in China's "three seas" (the Yellow, East China, and South China Seas) or an area defined by the "first island chain" consisting of the Kuril Islands, Japan, Taiwan, and the South China Sea.⁶ Indeed, since the late 1990's, the People's Liberation Army (PLA) has been selectively upgrading its existing weapons systems and platforms, while experimenting with the next generation of design concepts.⁷ In doing so, China has been selectively upgrading its nuclear and conventional ballistic missiles, integrated air, missile, and early warning defence systems, electronic and cyber-warfare capabilities, submarines, surface combat vessels and introducing fourth/fifth generation multi-role combat aircraft.⁸ Moreover, many of China's experimental weapons platforms and systems are expected to progress from an R&D to a production stage, including hypersonic vehicles, new classes of submarines, underwater sensors, unmanned systems and precision strike assets, as well as offensive and defensive space and cyber capabilities. With the qualitative shifts in "hardware", the PLA has been also revamping its "software" - military doctrine, organisational force structure, operational concepts, and training as reflected in the recently announced comprehensive PLA reforms. In 2016, China revamped its Central Military Commission (CMC), dissolved four general departments, created new service headquarters, and established five new theatre commands that replaced seven previous military regions (MRs). These changes are part of a sweeping

⁵ Terry Morris, Martha VanDriel, William Dries, Jason Perdue, Richard Schulz and Kristin Jacobsen, "Securing Operational Access: Evolving the Air-Sea Battle Concept," *The National Interest*, March/April (2015), p. 69-73.

⁶ Benjamin Schreer, "Planning the Unthinkable War: AirSea Battle and its Implications for Australia," *Australian Strategic Policy Institute Monograph* (2013), p. 8.

⁷ Tai Ming Cheung, "Introduction," In Tai Ming Cheung, ed., *Forging China's Military Might: A New Framework for Assessing Innovation* (Baltimore, MD: Johns Hopkins University Press, 2014), p.1-15.

⁸ Anthony Cordesman, Ashley Hess, Nicholas Yarosh, *Chinese Military Modernization and Force Development*, (Washington DC: Center for Strategic and International Studies, 2013).

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transformation of PLA institutions, force structure, and policy that will be ongoing through 2020.⁹ If current trends continue, the scale and sophistication of the PRC military challenge, coupled with its overall drive toward a “Comprehensive National Power” is capable to rival that of the U.S. in the next two decades.

At the same time, the U.S. also perceives threats from Russia and Iran, which are fielding increasingly advanced A2/AD-related military technologies. These technologies will likely diffuse further globally to a larger number of countries, while maturing in terms of sophistication and regional coverage. For the U.S., these A2/AD threats raise the potential costs of conflicts; undermine the credibility of U.S. security guarantees to its allies and partners; increase the costs of long-term competition as well as the risks of deterrence failure, and ultimately, provide multi-level strategic and operational risks for the U.S. forward-deployed forces. Consequently, the current constellation of U.S. forward bases in the Asia Pacific, consisting of “main operating bases” with permanent U.S. military presence, “forward operating sites” maintained by a relatively small U.S. support presence for temporary deployments, and “cooperative security locations” designed for contingency use - will become increasingly vital, yet paradoxically vulnerable” to A2/AD threats.¹⁰

Projecting power despite A2/AD challenges, however, is one of select top strategic priorities as outlined in the 2012 Defence Strategic Guidance, which includes (i) counter-terrorism and irregular warfare; (ii) deter and defeat aggression; (iii) project power despite anti-access/area denial (A2/AD) challenges, (iv) counter weapons of mass destruction, and (v) operate effectively in cyber-space and space.¹¹ Accordingly, the U.S. will have to address these threats not only in the improvements in the posture and capacity of the force, it will also require the development of unique capabilities to engage opposing forces at range and in mass with different types of fires. While the next U.S. administration will likely define its own defence strategy documents, these enduring challenges and requirements will likely continue.

⁹ Phillip Saunders and Joel Wuthnow, “China’s Goldwater-Nichols? Assessing PLA Organizational Reforms,” *Joint Forces Quarterly*, 82, no.3, (2016):68-75.

¹⁰ Carnes Lord and Andrew Erickson, “Guam and American Security in the Pacific,” In Carnes Lord and Andrew Erickson, eds., *Rebalancing U.S. Forces: Basing and Forward Presence in the Asia-Pacific* (Annapolis, MD: Naval Institute Press, 2014), p.9.

¹¹ Department of Defence, “Sustaining U.S. Global Leadership: Priorities for 21st Century Defence,” Office of the Secretary of Defence, January 12, 2012. Available at: http://archive.defense.gov/news/Defense_Strategic_Guidance.pdf.

ANTECEDENTS OF THE “THIRD” OFFSET STRATEGY

As its name implies, it is a third strategy of its kind. The first offset was launched in the 1950s as a “New Look” strategy by the Eisenhower administration. Back then, the U.S. and its allies in Europe faced a significant quantitative disadvantage against Soviet conventional forces and its satellite states: 92 Allied divisions against 175 Soviet divisions. Eisenhower ordered to work out a new strategy that would solve this problem. The result was the First Offset: the U.S. military would reduce its manpower and rely instead on nuclear weapons and their delivery systems. This would provide the most effective offset to Soviet conventional forces and their geographical proximity to Europe. The U.S. adopted a doctrine of massive retaliation using nuclear weapons as a credible deterrent against quantitatively superior Soviet forces.¹²

The First Offset lasted for about two decades, until the 1970s, when the Soviets managed to catch up in terms of quality and quantity of tactical and strategic nuclear weapons. In delivery systems, the Soviet Union actually achieved a competitive advantage against the U.S. systems a decade earlier - during the 1960s. At the end of the Vietnam War, the U.S. therefore initiated the Second Offset Strategy. In 1973, a small office within the Department of Defence, which later became the Defence Advanced Research Project Agency (DARPA), launched the Long-Range Research and Development Planning Program (later marked as the Second Offset Strategy). The aim was to increase the conventional military capabilities and effectiveness of U.S. forces and its allies against the militaries of the Warsaw Pact - without relying primarily on the quantity and use of nuclear weapons.

The varying conceptual, technological, and organisational innovations under the umbrella of the Second Offset Strategy became only apparent as a “Revolution in Military Affairs” in the post-Cold War era: from the Persian Gulf War (1991), through the Air War in Kosovo (1999), and subsequently, the protracted wars in Iraq and Afghanistan (2003-2010). These conflicts demonstrated the military effectiveness of U.S. precision munitions, stealth technologies, automated C4ISR systems, laser, electro-optics, telecommunications and many other advanced military-related technologies. In the 1980s, these technological innovations were paired with operational concepts such as the AirLand Battle (ALB 1982) and NATO’s Follow-on Forces Attack (FOFA), which provided the U.S. and NATO a qualitative superiority over the quantitative superiority of the Soviet Union. Since the mid-2000s, however, the margin of American military-technological superiority has been gradually eroding.

¹² Robert Martinage, *Toward a New Offset Strategy: Exploiting U.S. Long-Term Advantages to Restore U.S. Global Power Projection Capability*, (Washington D.C.: Center for Strategic and Budgetary Assessments, 2014).

TECHNOLOGICAL PRIORITY AREAS

While many of the details of the Third Offset technologies and programmes are clouded in secrecy, its baseline domains and priority areas are public, as shown in DOD budgetary requests, public affairs releases and statements. In particular, the initial phase of the Third Offset strategy, a part of the Future Years Defence Program (FYDP), consists of at least six priority areas for R&D programs, with a budget request of US\$18 billion for the next five years. This includes US\$3 billion on researching A2/AD technologies, US\$3 billion on submarine and undersea challenges, US\$3 billion on human-machine collaboration and teaming, US\$1.7 billion on cyber and electronic warfare, US\$500 million on guided munitions challenges, and US\$500 million on war gaming and the testing of third offset operational concepts. The Pentagon's fiscal 2017 budget request includes US\$71.8 billion for research and development, which includes US\$3.6 billion for the Third Offset.¹³

According to Robert Work, Deputy Secretary of Defence, top technological priorities described in the Third Offset include:¹⁴

- **Learning machines** – leveraging Artificial Intelligence and autonomy into an offset advantage; i.e. instantly responding against cyber-attacks, electronic attacks or attacks against space architecture or missiles;
- **Human-machine collaboration** - using advanced computers and visualisation to help people make faster, better and more relevant decisions;
- **Assisted human operations** - plugging every pilot, soldier, sailor and Marine into the battle network;
- **Human-machine combat teaming** - creating new ways for manned and unmanned platforms to operate; and
- **Network-enabled autonomous weapons** – weapons platforms and systems plugged into a learning command, control, communications and intelligence, or C3I, network.

¹³ Aaron Mehta, "Defence Department Budget: \$18B Over FYDP for Third Offset," *Defense News*, February 9, 2016. Available at: <http://www.defensenews.com/story/defense/policy-budget/budget/2016/02/09/third-offset-fy17-budget-pentagon-budget/80072048/>.

¹⁴ Cheryl Pellerin, "Work: Human-Machine Teaming Represents Defence Technology Future," *Department of Defence News*, November 8, 2015. Available at: <http://www.defense.gov/News/Article/Article/628154/work-human-machine-teaming-represents-defense-technology-future>.

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In this context, Work argues, “we believe this vision is very well-matched for an evolving era of technological dynamism as well as warfare where challenges are multi-domain and multi-functional and operations - especially cyber, electronic warfare and guided-munition salvos - move at high speeds. These speeds are going to shrink the human-based observe, orient, decide and act loop and we’re going to have to go after these technologies to fight fire with fire and buy back the time for our people to make decisions that will allow us to prevail at the tactical and operational levels of war.”¹⁵

Other “hidden” capabilities associated with the Third Offset will likely focus on cross-domain interactions in space, cyber, and electronic warfare. For example, under the Advanced Capabilities and Deterrence Panel, the DOD is exploring new ‘non-kinetic’ techniques and capabilities to counter ballistic missile threats. While open source information is scarce, these “left-of-launch” missile defence capabilities may potentially include hacking into an adversary’s command and control networks, system computers, and their sensors prior to missile launches; as well as jamming radars and navigations systems so that the missiles that do launch fly off target. In turn, these techniques could reduce the number of incoming missiles, and thus the number of multi-million dollar interceptors the U.S. has to fire at them.¹⁶ Furthermore, given the accelerated nuclear modernisation in the Russian and Chinese arsenals, and their potential use at the tactical level, it is likely that the Third Offset will also focus on these challenges, albeit behind the veil of secrecy. In the U.S., this may include a new generation of steerable and smart tactical nuclear weapons such as the B61-12.¹⁷

¹⁶ Cheryl Pellerin, “Deputy Secretary Discusses Third Offset, First Organizational Construct,” *Department of Defense News*, September 21, 2016. Available at: <http://www.defense.gov/News/Article/Article/951689>.

¹⁶ Bill Gertz, “Pentagon Developing Pre-Launch Cyber Attacks on Missiles,” *The Washington Free Beacon*, April 14, 2016. Available at: <http://freebeacon.com/national-security/pentagon-developing-pre-launch-cyber-attacks-missiles/>.

¹⁷ National Nuclear Security Administration, “NNSA Reaches Important Milestone with B61-12 Life Extension Program,” Department of Energy, National Nuclear Security Administration, August 1, 2016. Available at: <https://nnsa.energy.gov/mediaroom/pressreleases/nnsa-reaches-important-milestone-b61-12-life-extension-program>.

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The Third Offset Strategy also aims to revamp the institutional agility in U.S. defence management to succeed in a dynamically evolving operational environment – accelerating the ability to out-innovate adversaries, rethinking how the DOD sources technology and perhaps rethinking its models for product delivery. In the process, the DOD envisions streamlining science and technology (S&T), enterprise to support sustained research in fundamental technologies and quickly leveraging emerging technical opportunities. This means leveraging all potential sources of technical advantage, from traditional industrial base to non-traditional suppliers, and from academia to help to create competitive advantage.¹⁸ For example, the DOD relies on commercial space-based technologies such as “Dove nanosatellites”, which can be launched in high numbers into a sun-synchronous orbit to provide a continuous “line scanner” of the entire planet.¹⁹

¹⁸ Cheryl Pellerin, “DoD’s Technological Superiority Depends On Out-Innovating Adversaries,” *Department of Defense News*, September 16, 2016. Available at: <http://www.defense.gov/News/Article/Article/947041/dods-technological-superiority-depends-on-out-innovating-adversaries>.

¹⁹ Sara Boettiger and Sean Wagstaff, “Flock of Nano Satellites to Capture High-Res Views of Whole Earth,” *Scientific American*, January 10, 2014. Available at: <http://www.scientificamerican.com/article/flock-of-nano-satellites-to-capture-high-res-views-of-whole-earth/>.

RUSSIAN ASSESSMENTS OF THE THIRD OFFSET STRATEGY

Strategic effectiveness of the Third Offset, however, will depend not only on the institutional agility and adoption capacity – the financial intensity and organisational capital required to adopt military innovations²⁰, but also equally importantly on the responses, resources, and counter-innovations by peer competitors. Notwithstanding the diffusion and convergence of novel technologies - electronic miniaturisation, additive manufacturing, nano-technology, artificial intelligence, space-like capabilities, and unmanned systems that are likely to alter the character of conflict over time, the patterns of “challenge, strategic response, and adaptation” will continue to shape the direction and character of long-term strategic competitions. In this context, the following paragraphs provide a brief assessment of the evolving contours of Russian strategic thought and responses toward the U.S. Third Offset.

To this day, Russian officials have not made public comments on the Third offset strategy. From the Russian point of view, the Strategy is still in its early formation stages, with intense discussions in the U.S. defence community, and subject to change under the Trump administration. However, the Russian military has been closely monitoring the Third Offset Strategy’s areas of technological development, supporting research by leading Russian academic institutions, while assessing its long-term consequences. According to the Russian writings, the Third Offset Strategy is viewed to be primarily ‘anti-Chinese’ although it has significant strategic implications for Russia; much as the First and the Second Offset Strategies were ‘anti-Soviet’, but with profound consequences for the rest of the world.²¹ In essence, the U.S. expects to leverage its technological superiority to offset the growing resources that China can channel into its defence sector. Like the first two strategies, the Third is emerging at a time when the U.S. is facing budgetary constraints, while the resources of potential U.S. adversaries are growing. In some aspects, the situation is even more complicated than in the past.

During the Cold War, the U.S. was capable of concentrating forces principally against the Soviet Union; today, however, the U.S. military is constrained by its global force dispersion and full spectrum capability requirements, compounded

²⁰ Michael Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics* (Princeton: Princeton University Press, 2010).

²¹ А.Кокшын, В.Бартенев, В.Веселов, “Подготовка революции в военном деле в условиях бюджетных ограничений. Новые инициативы министерства обороны США,” “США и Канада: экономика, политика и культура,” no. 11, 2015. (A.Kokoshin, V.Bartenev, V.Veselov, “Preparing for the Revolution in the Military Affairs under Budgetary Limitations). Available at: <http://viperson.ru/articles/podgotovka-revolutsii-v-voennom-dele-v-usloviyah-byudzhetnyh-ogranicheniy-novye-initsiativy-ministerstva-oborony-ssha>.

by commitments in the Middle East, the Eastern Europe, and increasingly in East Asia. The U.S. military has to rely on its technological advantages to offset its current range of operational requirements, while focusing on the future development of advanced or disruptive technologies that will likely result in radical changes in defence economy and on the battlefield. Moreover, China has a much larger, more diversified and dynamic economy than the previous Soviet Union. In terms of purchasing power parity (PPP), China has already overtaken the American economy and, despite its slowdown, continues to grow faster than the American one. China's official defence budget stands at less than 1.5% of GDP. Even if all other defence-related expenditures not included into the official budget are taken into account, the total expenses most likely do not exceed 1.9-2% GDP (SIPRI assessments for most of the past several years), below the world average. This suggests that the Chinese, if needed, could afford a significant increase of their defence budget even in the situation of a slower growth.

For Russia, key aspects of the Third Offset strategy that are of immediate concern include the Strategy's effect on the strategic stability and its influence on the globalisation of processes in the high technology industry.²² Russia views both its strategic and tactical nuclear forces as the cornerstone of its national security. Furthermore, Russian defence leadership closely monitors select U.S. R&D projects related to directed energy weapons, hypersonic weapons, and ballistic missile defences, among others. While these technological initiatives have existed long before the Third Offset Strategy, they shape top priorities in the U.S. military innovation. At the same time, Russian experts have also noted the Third Offset's emphasis on spin-on and spin-off effects from civilian science and technology bases for defence needs. From the Russian perspective, the U.S. could potentially establish additional export barriers for select technologies, previously considered as civilian, especially to peer competitors such as China and Russia. These concerns strengthen the cause of the proponents of more active import substitution policies, and contribute to increased interests in forming industrial partnerships with major developing countries, such as China and India.

²² Л. Панова, "Стратегическая стабильность и новая американская стратегия компенсации," Вестник Московского Университета. Серия 25. Международные отношения и мировая политика, no. 3, 2015. (L. Panova, "Strategic Stability and the New American Offset Strategy," The Bulletin of the Moscow University. vol. 25, no.3, 2015). Available at: <http://www.ebiblioteka.ru/browse/doc/46134597>.

RUSSIAN RESPONSES

While the U.S. Third Offset Strategy is a recent development, its core technological initiatives have long been a significant cause of concern for Russia. In this context, Russian responses to counter these initiatives consist of two major elements: The first one is 'countering the Third Offset Strategy with the First Offset Strategy', which means prioritising the development of a wide array of both strategic and tactical nuclear weapons systems. According to Russian strategic thought, maintaining a variety of sophisticated nuclear weapons can invalidate any conventional advantages of the U.S., NATO, and China. Ensuring that Russia remains a nuclear superpower is the basis of all Russian security policies. Moscow has never seized the development of strategic and tactical weapon systems even during the darkest days of 1990s, and accelerated their research and development during the period of swift economic growth of the 2000s. Russia sees nuclear weapons as the most cost-effective pillar of strategic deterrence. The Strategic Rocket Forces, the service that controls the Russian ground based ICBMs and serves as the main component of the Russian strategic nuclear triad, accounts for less than 5% of defence expenditures.²³

Notwithstanding Russia's recent economic downturn and defence expenditure cuts, select major nuclear-related projects continue to expand. To begin with, Russia has been deploying the new RS-24 Yars (SS-27 Mod 2) ICBMs, and the new Borei class SSBNs armed with RSM-56 Bulava (SS-N-32) missile systems. Simultaneously, however, Russia has been developing at least two additional ICBM families: a heavy liquid fuel Sarmat ICBM (RS-28) and a mobile solid fuel Rubezh (RS-26) system, specifically designed to defeat future U.S. missile defence shields in Europe. The development of a rail-based ICBM system utilising one of the existing ICBM types (most likely RS-24) has also started. Furthermore, Russia is working on the hypersonic reentry vehicles for its ICBMs.²⁴ Another extensive programme is the development of a significantly upgraded version of Tu-160 Blackjack strategic bomber, which will be produced in Kazan. Moscow takes any possible threat to the effectiveness of Russian nuclear forces very seriously, and immediately embarks on planning countermeasures. In 2015, the Russian state-run TV, reporting on a policy meeting in Kremlin, has revealed, most likely

²³ "Statement by the former Chief of Staff of the Russian Strategic Rocket Forces Gen. Victor Esin - Press Conference," *Interfax.Ru*, February 15, 2014. Available at: <http://www.interfax.ru/presscenter/360999>.

²⁴ "В России испытали гиперзвуковой управляемый боевой блок для баллистических ракет," *Lenta.Ru*, April, 21, 2016. ("Russia has tested a Hypersonic Reentry Vehicle for Ballistic Missiles.") Available at: <https://lenta.ru/news/2016/04/21/agbol/>.

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intentionally, the existence of a bizarre strategic weapons project called Status-6 -- a 10,000+ km range nuclear-powered torpedo, capable of travelling at the depth of 1,000 meters at great speeds. The stated purpose of this weapon is to destroy coastal cities and installations with nuclear warheads, although different types of payload are also a possibility.²⁵

Russia continues to develop and deploy a wide range of tactical nuclear weapons, including nuclear-capable cruise missiles, nuclear bombs, nuclear-capable SAM missiles for long-range SAM systems, nuclear torpedoes, and nuclear versions of short-range ballistic missiles. These projects, especially the rearmament of ten missile brigades of the Russian Army with the Iskander (SS-26 Stone) short-range missile systems, are also a high priority.²⁶ Some of the Russian countermeasures are rather unique. Russia is the only country in the world which deploys medium-range cruise missiles (Kalibr, SS-N-30A) on small (less than 1,000 tons of displacement) corvettes. Such ships belonging to the existing Buyan-M and the future Karakurt classes are estimated to be produced in significant numbers. The Buyan-M corvettes were combat-tested as cruise missile carriers in the Syrian campaign as well as the new Russia project 636.3 (Improved Kilo) conventional submarines. Other delivery systems, including SS-26, Su-34 tactical bombers, and the new air-launched cruise missiles have been also combat-tested during the Syrian war. In short, Russia's programmes focusing on rearmament of the nuclear forces are progressing into advanced stages. Russia already has a significant advantage over the U.S. in terms of the quality and variety of its delivery systems, and can reasonably ensure the strategic effectiveness of its nuclear forces in the near future.

The second element of the response strategy is more ambitious, carrying broader technological risks. Russia began to counter many of the U.S. technological initiatives using similar indigenous programmes, although more narrowly focused and smaller in scale. In October 2012, Russia established the Advanced Research Foundation (ARF) – a counterpart to the U.S. DARPA. The ARF focuses on research and development (R&D) of high-risk, high-pay-off technologies in areas

²⁵ "В Кремле прокомментировали кадры телеканалов с засекреченной системой Статус-6," *Lenta.Ru*, November 11, 2015. ("Kremlin comments on TV channels reports on the secret 'Status-6' system.") Available at: <https://lenta.ru/news/2015/11/11/oops/>.

²⁶ "20-я гвардейская ракетная бригада получила комплект ракетного комплекса Искандер-М," *VPK News*, June 30, 2016. ("20th Guards Missile Brigade Receives Iskander-M Missile Systems.") Available at: http://vpk.name/news/158502_20ya_gvardeiskaya_raketnaya_brigada_poluchila_komplekt_raketnogo_kompleksa_iskanderm.html.

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that are similarly receiving the attention of the Third Offset Strategy theorists, including hypersonic vehicles, artificial intelligence, additive technologies, unmanned underwater vehicles, cognitive technologies, directed energy weapons, and others. Russian technologies are at the early stages in some areas. However, in other areas such as directed energy weapons, rail gun, hypersonic vehicle; unmanned underwater vehicle programmes are progressing into advanced stages, backed by considerable financing for many years prior to the ARF.²⁷ Since Russian resources are limited and its political relations with the West are unlikely to be normalised anytime soon, it is possible, that Russia will try to establish new industrial partnerships with major non-Western countries such as India and China to secure financing and technological cooperation on these projects. Russia has already had a positive experience with India (BrahMos cruise missile joint production venture), and has just started two major joint programs with the Chinese - a wide-body passenger aircraft and advanced heavy helicopter programmes. The interest in establishing the new joint programmes with the Chinese is especially strong in the Russian space industry. The purchase of the Chinese space-grade microchip production technology in exchange of RD-180 liquid-fuel rocket engine technology is under negotiation, and may start a new stage in Sino-Russian cooperation.

²⁷ Advanced Research Foundation of the Russian Federation Website, "Areas of Work," Available at: <http://fpi.gov.ru/about/areas>.

STRATEGIC IMPLICATIONS FOR THE ASIA-PACIFIC

When considering the strategic consequences of the U.S. Third Offset Strategy and future Russian defence development for the Asia Pacific in general, it is important to understand the differences between the Russian defence policies as portrayed in the Russian mainstream media, the Russian defence policy described in the West, and the real Russian defence policy.

These three phenomena largely exist in three different universes, and are barely related to each other. The defence technology and military build-up programmes, which in reality will define the future Russian military and shape the strategic balance in the areas surrounding Russia, are almost never secret; they are well-described in the statements by Russian defence industry officials and professional publications of the Russian defence experts. These programmes, however, are rarely given attention and consideration in the publications of the Russian mainstream media, which tends to focus on the high profile, but mostly unrealistic weapons concepts. These are mostly ignored in the West, where the prevailing perceptions portray Moscow as a resurgent global power that will challenge the United States and the West on all fronts worldwide. Indeed, NATO's strategic thinking is mostly concerned with the Russian threat to the northern Baltic States and even Poland; and the growing Russian-Chinese cooperation that may counter the U.S. in the Asia Pacific.

However, the realities of Russian defence spending and geolocations where the new Russian military infrastructure is being set up suggest something very different. After 2014, the southern flank of the Eastern Europe once again became the key theatre for the Russian military. This signalled a possible large-scale military conflict on Ukrainian territory, which could potentially escalate into a military conflict with NATO, and subsequently into a nuclear phase. A massive military build-up began in 2015 in the Western and Southern Military Districts of the European part of Russia, where new army headquarters have been set up along the Ukrainian border, and a number of new divisions and brigades have been activated.²⁸ Prior to the Ukrainian crisis, Russia had almost no combat ready ground troops on the Ukrainian border. Thus, this effort requires large-scale capital investment to build new housing, training, storage and maintenance facilities. Unlike the procurement of the weapon systems, which can be moved around the country, such capital investments mean that there is a strong long-term commitment towards maintaining the Russian military in high readiness for a potential new round of security crisis involving the Ukraine. Activity in other areas, especially on the Baltic theatre, is limited. Two other major areas of concern

²⁸ Руслан Пухов, "Наша карта Африки," *Ведомости*, July, 15, 2016. (Ruslan Pukhov, "Our map of Africa," *Vedomosti*, July 15, 2016). Available at: <http://www.vedomosti.ru/opinion/articles/2016/07/15/649326-nasha-karta-afriki>.

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for Russian defence planners include Central Asia and the Caucasus. The rearmament and rebuilding of the military infrastructure that Russia has embarked on since 2008 has affected the Russian Far East; however, the Ukrainian crisis has clearly downgraded the Asia Pacific on the priority list of the Russian military.

Russian procurement planning increasingly focuses on the needs for ground forces and tactical air forces that are preparing to operate on the Ukrainian and Central Asian theatres. Another priority is the strengthening of strategic capabilities including the strategic nuclear forces, nuclear attack submarine fleet, air defence capabilities, missile defence capabilities, and C4ISR capabilities in order to provide the Russian leadership with a range of possible options in case the conflict with NATO escalates. Notwithstanding the varying strategic weapon programmes, Russian defence investments resulting in actual novel capabilities include the introduction of the new tactical C4ISR systems, the development of next generations of ground combat vehicles (heavy tracked Armata, medium tracked Kurganets-25, and wheeled Boomerang), replacing the old Soviet fighter fleet with generation 4++ Su-35 and Su-30MKM fighters, Su-34 tactical bombers, and, going forward, with a limited number of T-50 5th generation fighters, large scale rearmament of the Aerospace Force and Ground Force air defence components, development and procurement of the new generation of precision weapons.

The above priority military modernisation programmes have received great attention from the top Russian defence leadership, but are in stark contrast with some other areas, where there is wide media coverage but few actual developments taking place. The best example of the latter is the Russian Navy. The mainstay of the current Russian Navy blue water capability consists of only seven Project 1155 Udaloy class anti-submarine destroyers of which the oldest was commissioned in 1981 and the youngest in 1992. Two of them, 'Admiral Vinogradov' (commissioned in 1989) and 'Admiral Tributs' (1986) together with an equally old 'Peresvet' landing ship and two support ships comprised the Russian squadron which participated in the recent much advertised joint exercise with the Chinese in the South China Sea. These old and constantly used ships are not expecting replacements anytime soon. They can be augmented by one upgraded project 1155.1 destroyer completed in 1999, three old Slava class (built between 1983 and 1989) conventional powered missile cruisers, and one Kirov class (1998) nuclear cruiser. Another old Kirov-class cruiser is being currently overhauled and possibly will be reactivated after 2018.²⁹ Russia also still maintains its only aircraft carrier, Admiral Kuznetsov, plagued with technical problems. The rest of the Russian major surface combatants are not capable of long-term overseas

²⁹ "Адмирал Нахимов» модернизируют," *Севмаш*, June 13, 2013. ("Admiral Nakhimov to be Upgraded," Sevmarsh shipyard website). Available at: <http://www.sevmash.ru/rus/news/1622--r-.html>.

operations due to their poor technical condition and obsolescence.

The Russian fleet of 19 amphibious landing ships, aging from 50 to 25 years is also facing serious problems: since 2012, they were withstanding the worst of the operation unofficially known as ‘Syrian expresses’ – a considerable logistical effort to supply the Syrian Arab Army fighting in the civil war and, later, the Russian military operation in Syria. Russian intervention in Syria was only possible because of the proximity of Syria to the Russian Black Sea ports and with support of the regional countries, including Iran and Iraq. Notwithstanding the optimistic statements from the Russian Navy headquarters and widely publicised megaprojects such as the construction of eight or even 12 huge Lider (Leader) class nuclear powered destroyers³⁰, speculations about future new aircraft carrier and amphibious assault ships, the known facts suggest that the blue water navy and power projection capabilities in general will shrink or, at best, remain on the current modest level. In recent years, even less ambitious naval projects such as the construction of Admiral Gorshkov class frigates and Ivan Gren class landing ships have fallen greatly behind the schedule and have been scaled down. If we look at how the money is spent and what activities are in reality taking place, we see that, as far as the Navy is concerned, Russia invests in the nuclear submarine fleet, coastal defence and the relatively cheap brown water platforms, such as conventional submarines and missile corvettes.

In the long-term, Russian conventional capabilities will likely reflect investments and technological R&D milestones in the following priority areas:

- Robotic and remotely controlled systems, including UAVs, as well as ground vehicles – combat, reconnaissance, logistical, which are currently undergoing vigorous testing;
- New generation of electronic warfare systems and expanded capabilities in cyber-warfare;
- Introduction of the advanced command and control systems, including battlefield internet;
- Advanced long-range and ultra-long-range air defence and missile defence systems with ASAT capabilities, which will be used not just for air defence, but for gaining air superiority, offsetting the advantages of the Western adversaries;

³⁰ “Технический проект эсминцев ‘Лидер’ будет готов в 2017 году,” *Lenta.Ru*, September, 6 2016. (“Technical Design of the Lider-class Destroyers to be Ready in 2017.”) Available at: <https://lenta.ru/news/2016/09/06/leader/>.

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- New generation of well-protected armored vehicles that will dramatically reduce losses in the local conflicts;
- Advanced fighter aircraft capable of engaging the 5th generation Western fighters;
- Hypersonic weapons as the main way to defeat future developments in foreign anti-air and missile defence systems;
- Directed energy weapons programmes designed to establish foundations for the future weapons development;

The implementation of these programmes over the next decade may enable Russia to keep pace with disruptive innovations taking place in the U.S. Third Offset Strategy. At the same time, however, Russian investment into other power projection capabilities, including the new generations of the major surface combatants of the Navy, strategic airlift, amphibious capabilities are and will likely remain limited - aimed at maintaining the current potential at best. Such disparity in priorities seems to be defined by the ongoing confrontation with the West and the expected developments in defence technology, which make it necessary for Russia to concentrate resources on a limited number of strategically relevant projects. Under current conditions, it is very unlikely, and almost impossible for Russia to assume a role of a global military power capable of opposing the West in geographically distant areas. As described once by the U.S. President Barak Obama, Russia will remain a 'regional power'. Although Russian military capabilities in the areas along the Russian borders will likely remain formidable, their ability to maintain a presence and influence in the more remote parts of the world, including Southeast Asia will be limited.

That said, the Third Offset Strategy and concomitant Russian and Chinese countermeasures will shape East Asia's strategic environment in the 21st century. First, the ongoing military innovation changes the dynamics of great power competition, and thus the character of future warfare. In this context, regional strategic competition will likely reflect asymmetric negation, strategic ambiguity, denial and deception, particularly in the emerging new domains of warfare: space, cyber-space, near-space, and underwater. With the widening operational requirements and diffusion of advanced technologies, Russia, China, and the U.S. will rethink existing concepts of operations, organisational force structures, training, and ultimately, military-technological acquisition priorities. Select military technologies and capabilities will subsequently diffuse throughout other major powers in the region, reshaping military modernisation paths and patterns, while bringing about a complex set of new strategic and operational challenges.

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