



Missile defense and early warning missile attack system cooperation: Enhancing the Sino-Russian defense partnership

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TAKEAWAYS

- **Russia is offering China assistance to develop its own early warning missile attack system. This marks a new area of strategic cooperation between the two states and markedly upgrades the potential for China's strategic defense capabilities.**
- **It remains unclear what the exact nature and future trajectory of the early warning system initiative and Sino-Russian missile defense cooperation more broadly will be.**
- **China and Russia are unlikely to construct an integrated missile defense system akin to what the US has with several of its allies.**
- **Despite Western (recurring) concerns of a China-Russia military alliance in the making, there are several obstacles for this to happen. Nonetheless, the early warning system initiative attests to closer Sino-Russian defense cooperation, including in more strategic fields and sensitive technologies. The West should follow these developments closely.**

At the sidelines of the 16th Valdai Forum in Sochi of Russia in October 2019, Russia's President Vladimir Putin announced that Russia will assist China in developing an early warning missile attack system. As [Putin](#) said, "We are helping our Chinese partners to create a system of warning of a missile attack...This is a fundamental thing that will considerably, cardinally increase China's defense capability". An early warning system constitutes a highly sophisticated and sensitive technology and currently only Russia and the US possess this capability. While rumors of an early warning system cooperation had been floated for some years, the announcement nonetheless took the international community by surprise. [Observers and policy experts](#) see the initiative as yet another step by China and Russia towards forging a military-alliance. But is this so? This IFS Insight intends to shed some light on Sino-Russian missile defense cooperation with a Chinese focus. The paper poses the following guiding questions: What does China seek to achieve in developing

an early warning missile attack system? What does the new initiative indicate about Sino-Russian missile defense cooperation and more broadly about the evolving Sino-Russian defense and security partnership?

CHINA'S INTEREST IN AN EARLY WARNING SYSTEM

An early warning missile attack system is comprised of technically sophisticated networks of ground-based radar systems and satellite sensors. The primary objective is to detect intercontinental ballistic missiles (ICBMs) launches, and then calculate their trajectories with the aim to initiate timely and relevant defense and counter-responses. An early warning system is a necessary component in a more comprehensive missile defense system, although it can perform functions by its own. This includes for instance acquiring knowledge of how missile defense systems operate and importantly gaining time to protect high-value assets such as political leadership and military facilities and crucial arms assets, for example mobile nuclear weapons platforms. Today, only the US and Russia have developed operational early warning system but other countries such as China and India are looking to obtain or develop similar capabilities.

China has [for some time devoted interest and resources](#) in developing capabilities to defend itself from missile challenges, from short-range missile threats to ICBMs, including efforts to master early warning technologies. Today China has developed a robust Integrated Air Defense System (IADS) architecture over its land territory and within 556 km of its coast which relies on local radar networks, fighter aircrafts and an increasingly advanced arsenal of surface-to-air (SAM) systems. China's SAM capabilities (which partly can perform missile defense functions) consist of both domestically produced systems and acquired from abroad, mostly from Russia. The most recent system includes the S-400 surface-to-air system, marking a qualitative upgrade for Chinese air and missile defense. [Russian defense planners](#) claim that they soon will start production

and deployment of the even more advanced S-500 system. If China also buys the S-500, it will likely add further sophistication to its defense network systems. In addition, China is also making strides in its indigenous technical competence, for instance with the HQ-19 system. The system is an upgraded variant of the existing HQ-9 system. According to [US assessments](#), the system will likely have ballistic missile defense capabilities and be operational in 2021.

That said, China lacks the full knowledge and technical equipment for a more comprehensive detection system for long-range missile threats, and especially for ICBMs. For instance, while the S-400 system improves China's air defenses as it fields capabilities to destroy aircraft, cruise and ballistic missiles, its radar system is limited to detect and track aerial targets within a range of 600 kilometers and altitudes up to 27 kilometers. Its main function is more regional, primarily to deny US airpower and cruise missile performance in the event of an US-China military conflict in the Asia-Pacific region, especially over Taiwan. The HQ-19 system is likely to have a range between 1000 to 3000 kilometers, which therefore can counter medium-range ballistic missiles.

A more sensitive system with longer range would thus allow China to more rapidly detect incoming missiles launched from far distances and give Beijing more time for defense responses, in particular protecting its mobile nuclear launch weapons platforms. This will also make China's limited nuclear arsenal more survivable (it is estimated that China has a stockpile of around 230 warheads) and therefore increase its deterrence posture. Additionally, China is developing related capabilities and technologies to deal with more long-range threats, for example anti-satellite tests (ASATS) and counter-space capabilities that include ground laser weapons which can destroy high altitude targets or disrupt satellite communications.

China's interest in developing an early warning system relates to concerns over US military strategic capabilities and its nuclear strategy. This in itself is fundamentally

derived from Beijing's perception of US China policy aimed at constraining growing Chinese power and influence in Asia utilizing its military might and alliance systems. For instance, Beijing calculates that a large portion of US nuclear missile assets target China, including ground and submarine based ballistic missiles. With the US withdrawal from the Intermediate-Range Nuclear Forces Treaty (INF) in 2019 (the US alleged for years Russia violated the treaty), Washington has indicated [deployment](#) of ground-based intermediate ballistic missiles on US allied soil in the Asia-Pacific region. Incoming attacks from adjacent regions to China but also from US territory therefore calls for greater Chinese systems with improved defense capabilities.

In addition, China also worries over US ballistic missile defenses. Beijing is concerned that in the event of a military conflict with the US, Washington could take out large parts of China's nuclear forces. While China holds a credible second-strike capability and has developed a range of decoys to deceive US missile defense systems, it remains deeply concerned that a subsequent Chinese retaliation attack nonetheless could be blocked by US missile defense capabilities. The effect is that US missile defense systems [undermine](#) Chinese nuclear retaliation capabilities which leaves it vulnerable to US nuclear coercion. While concerns over US missile defense systems differs from fears over US missile attacks, they form part and parcel of deep-rooted security concerns over US strategic capabilities and intentions.

A MORE SOPHISTICATED SINO-RUSSIAN DEFENSE PARTNERSHIP

Russia is a long-time player in the missile defense technologies domain. In addition, Moscow is Beijing's closest international strategic partner. While Sino-Russian relations have [improved gradually](#) ever since the end of the Cold War, growing global rivalry between China and the US and continued strained US-Russia relations following the Ukraine crisis in 2014 is

pushing China and Russia even closer together. The two sides [enjoy extensive](#) diplomatic, energy and military cooperation, are increasingly aligned on global affairs and also coordinate their policies in various regions. Importantly, the growing alignment implies that China and Russia have secured their common "strategic flanks". This means that they can devote more resources to deal with strategic pressure from the US, especially in their respective "sphere of influence"; for Russia in Europe and for China in the Asia-Pacific region while working in tandem on global security issues.

Beijing and Moscow have in particular strengthened their [security collaboration](#). There has been a [gradual institutionalization](#) of regularized mechanisms for inter-military consultations, dialogue on virtually all levels, from the top leadership down to regional military district level, and even among their border garrisons. Arms trade constitutes a major component of this cooperation, although it has been rather one-dimensional with Russia providing China with mainly off-the shelf weapons systems and basic technology. In recent years, however, the relationship has evolved to include a more sophisticated and dynamic interaction with Russia exporting more advanced weapons systems (such as the 2015 sale of 24 SU-35 combat aircrafts and the mentioned S-400 system). Joint production schemes are emerging, for instance a joint program to develop heavy-lift helicopters. China is also beginning to provide Russia with weapons parts and technical expertise as its domestic defense industry is making continuous technological advancements. Finally, China and Russia have developed more sophisticated joint military exercises, not least naval exercises, including in sensitive areas, for example the South China Sea and in European waters, such as in the Baltic Sea in 2017.

Notably, there has been growing trends towards cooperation in more strategic fields and sensitive technologies. China and Russia are increasing their efforts on cooperation in [emerging technologies](#), such as artificial intelligence (AI), robotics and

telecommunications. Many of these are so called dual-use technologies, with blurred lines between civilian and military use and applications. Cooperation in AI and information technologies, for instance, could enhance both countries' capabilities to develop the next generation of autonomous and hypersonic military weapons and other capabilities. Moreover, in 2017 China and Russia signed a three-year road map to strengthen military cooperation. According to Vasily Kashin, a Russian military expert, there are clearly indicated ambitions to [boost collaboration](#) in areas such as hypersonic technology, the construction of nuclear submarines, and on strategic missile defense.

STRATEGIC MISSILE DEFENSE COOPERATION

That said, according to open source information, cooperation on strategic missile defense has so far not been a particularly prominent component in the defense partnership. The 2019 early warning system initiative announced by President Putin therefore marks an interesting step forward.

Details of the content and timeline remain elusive but Russia will likely [assist China](#) with developments of ground based radar systems or early warning sensors on satellites, and possibly also training of Chinese military officers. Some speculate the two sides could integrate their systems and [jointly share](#) data and information about third party launches. In practice, the Chinese would be warned by Russia of incoming missiles strikes from stations in Russia's north and the Russians from Chinese stations in China's south and southeast. For China, the shortest route with ICMBs from the US is over the North Pole and having Russian assistance in early warning would of course be of very helpful to say the least. That said, Russia will remain skeptical in allowing Chinese integration into its radar system network.

For Russia, the initiative however signals to the US that it is prepared to offer China highly sensitive technology, which at the same time bolsters strategic trust between Beijing and Moscow. Cooperation in strategic

weaponry will further complicate US-China relations, although both Beijing and Moscow deny that the cooperation is directed toward any third party. Moreover, having Russian companies provide China with key technologies means commercial revenue for the Russian defense-industry while also lower incentives for China to copy or steal Russian defense technology (which has been a recurring concern for Russia). For example, Russian corporation Vypel is likely [involved](#) in the process. Vypel possesses technical competence to develop systems design to counter missile and space-based threats, including surveillance and a full range of counter-measures. [Other reports](#) note that the system will be based on Russian Tundra satellites and Voronezh ground-based radar stations. It is however likely that China will want to integrate the main parts itself as Beijing wishes to [keep full control](#) over the system. A related question is whether Russia can deliver properly. For instance, Russia is planning a domestic roll-out of the Tundra satellite system by 2022, but so far only a few satellites are in orbit. Technical difficulties, commercial challenges and political infightings are currently inhibiting developments. For instance, the Russian Ministry of Defense [is suing the company](#) behind the satellites, RKK Energia Space Corporation, because of failed contract obligations, including on Tundra satellites.

Nonetheless, the early warning initiative suggest that China and Russia are breaking new ground on issues pertaining to strategic missile defense issues. China and Russia share a long-standing aversion over US missile defense systems in general, and particular after the US abrogated the anti-ballistic missile treaty (ABM-Treaty) in 2001 which was strongly opposed by Russia and especially by China. More recently, both China and Russia voiced strong opposition to the US deployment of the Terminal High Altitude Area Defense (THAAD) system in South Korea. Tellingly, the two sides now work together broadly on air defense and anti-missile defense systems through the initiated [AirSpace Security Computer program](#), exemplified by joint computer simulated

anti-missile defense drills held in 2017 and 2018. In addition, Russian and Chinese experts are more openly discussing the possibilities of a [joint Sino-Russian missile defense system](#).

That said, it remains unclear what the exact nature and future trajectory of the Sino-Russian early warning system cooperation will be, let alone the potential for more extensive missile defense cooperation. If China and Russia want to further increase their cooperation and develop an integrated joint Sino-Russian missile defense system akin to what the US has with several of its allies, this would of course mark a truly landmark breakthrough in terms of military cooperation between the two states. This seems highly unlikely though, due to a host of practical (how compatible are the systems), political and security reasons.

Moreover, one should be careful with assessments regarding China's plans for a potential national ballistic missile defense system (although developments toward a more limited system should not be excluded). [China remains](#) skeptical about the reliability and costs to develop and manage a comprehensive missile defense system; indeed many in Chinese strategic circles doubt the efficiency of the US ballistic missile defense system. More broadly, a missile defense system also would pose difficult questions to Beijing over whether to change to a "launch-on warning" posture, similar to the US and Russia. Such a posture would imply a radical departure from China's "no-first use" principle, a long-standing and core nuclear strategy. That said, an early warning system will make Beijing feel more confident in relation to other nuclear powers. An early warning system provides more reliable information on potential enemy missile launches, which absent such capabilities could lead to launches of nuclear weapons due to mistakes or accidents. This therefore has a stabilizing effect on global strategic stability. A more confident China will make the US (and Russia for that matter) more relaxed if China also possesses a fully operational and reliable system, thus adding

some [mutual confidence](#) between the world's leading nuclear powers.

CLOSE STRATEGIC PARTNERS BUT NO ALLIANCE

The West will perceive the early warning system cooperation as a sign of tighter Sino-Russian military ties, and yet another building block towards forging a potential military alliance. For the US in particular, this will confirm growing beliefs in US military and policy circles that Chinese (and Russian) strategic capabilities need to be countered even more forcefully, itself further triggering Chinese and (Russian) views of US containment.

However, there are several obstacles and challenges for a formal alliance to materialize any time soon. Mutual distrust, highly protective and nationalistic industrial-defense sectors, different economic priorities and strengths still constrains Sino-Russian defense cooperation, and indeed the [overall bilateral relationship](#) as such. Moreover, China and Russia remain dependent on Western trade, technologies and human talent exchange and wish to keep cordinal links with the West for their economic and social development. Finally, both Beijing and Moscow value their strategic independence deeply. A formal alliance would bind the two sides into a commitment they are not willing to make; notably to aid the other side military in a potential conflict with a third party.

That said, much suggest that Beijing and Moscow will continue to strengthen their strategic partnership and advance their defense cooperation as this benefits both countries materially, commercially and not least strategically. Seen from Beijing, the global security situation is deteriorating with intensified security competition with the US. The US-China trade war and the global response to manage the Covid-19 pandemic only accelerate [these trends](#). Facing growing US (and EU) technology, investment and market restrictions, China is pushed to accelerate its own indigenous innovation and technology but also to collaborate closer with

friendly-minded states to compensate for the loss of overseas technology access and market opportunities. Russia, being China's closet strategic partner and in possession of some key technologies is therefore filling an important gap in assisting the further modernization of the Chinese military. This will also further consolidate the already well established security partnership between China and Russia. Alliance or not.



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