

# The breakdown of nuclear arms control and its implications

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## Introduction

The important but cumbersome bilateral nuclear arms control process between the United States and the Soviet Union and later Russian Federation, a result of genuine efforts leading to impressive legally binding nuclear arms control treaties (INF 1987, START 1991, START II 1993), ran into trouble in the early 2000s. Presidents George W. Bush and Vladimir Putin couldn't agree on how to proceed.

Missile defense was a key priority for the Bush administration which decided to withdraw from the 1972 landmark ABM treaty, effective 13 June 2002. President Vladimir Putin responded in kind and declared that Russia no longer was bound by START II.1 That treaty specifically prohibited multiple warheads (MIRV) on strategic ICBM missiles and heavy ICBMs, such as the huge SS-18 Satan missile altogether.

For the Russian political and military leadership U.S. missile defense, however limited in quantity and performance capability, was perceived as too threatening in the long run. Vocal objections from Russian missile professionals and designers claiming overwhelming superiority of Russia's offensive missiles over any missile defense systems for decades to come, were dismissed.<sup>2</sup>

Russia embarked upon a vigorous program to rebuild its strategic nuclear forces. The New START treaty, which came into force in February 2011, was however still in the

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1 Caroline Wyatt, *Russia abandons Start II arms treaty*, BBC News, 14 June 2002

2 *Russian Nukes Not Undercut by U.S. Missile Defense, State Expert Says*, Nuclear Threat Initiative, 18 March, 2011

Russian interest. It reduced the U.S. strategic arsenal, and more importantly, delayed U.S. response to Russia's nuclear build-up, which already was well on its way, not only in the strategic field, but also in INF and short-range weapon systems. This was the starting point of a process, which has led to a situation where nuclear arms control between the two major nuclear powers is on the verge of collapse.

American officials believe Russia began conducting flight tests of a missile, prohibited by the INF treaty as early as 2008.<sup>3</sup> The U.S. informed NATO of Russia's treaty breach in January 2014.<sup>4</sup> At that time the particular missile type was not yet disclosed.

This dispute between Russia and the U.S. was not solved and finally the Trump administration, with its open dislike for bilateral or multilateral agreements constraining the USA, drew its own conclusions.

The U.S. Secretary of State, Mike Pompeo, the 1<sup>st</sup> of February 2019 announced the U.S. withdrawal from the INF treaty, an agreement which eliminated ground-based ballistic missiles, cruise missiles and missile launchers in the 500 – 5 500 km range. Legally, the INF treaty would be terminated six months later. The decision was widely feared to lead to an arms race.<sup>5</sup>

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3 Michael R. Gordon, *U.S. Says Russia Tested Missile, Despite Treaty*, The New York Times, 29 January 2014

4 Jonathan Marcus, *US briefs Nato on Russian 'nuclear treaty breach'*, BBC News, 30 January 2014

5 Anne Gearan, Paul Sonne och Carol Morello, *U.S. to withdraw from arms control treaty with Russia, raising fears of a new arms race with Russia*, The Washington Post, 1 February 2019

The following day, Russia reacted with an equivalent decision.<sup>6</sup> President Putin, Foreign Minister Lavrov and Defense Minister Shoigu, looked theatrically serious when they assured that they had done everything in their power to save the treaty, which the U.S. had violated. As a part of the U.S. missile shield in Europe, they had already in 2014 started to deploy Mk 41 launchers which also could be used for firing Tomahawk cruise missiles at Russia.<sup>7</sup>

The Russian approach may have some legal relevance, but from a practical standpoint it is absurd. The character of the European missile shield – known as European Phased Applied Approach, EPAA – is exclusively defensive. The last nuclear warheads of U.S. Navy Tomahawk missiles were dismantled at the beginning of the 2010s.<sup>8</sup> There are no American intentions to obtain offensive missiles for the missile shield.

The theoretical threat towards Russia, from a dozen of conventionally loaded and relatively slow Tomahawk missiles, is insignificant. These constitute only a fraction of the firepower which a single U.S. Navy Ticonderoga Class cruiser carries onboard. The two converted former Ohio Class strategic submarines could be mentioned as well, each with the capacity to fire more than 150 Tomahawk missiles.

Defense Minister Shoigu asked the president for a mandate to proceed with research, development and deployment of ground-based missile systems in the coming years, including already existing systems as the sea-based cruise missile Kalibr, as well as new hypersonic missile system

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6 The decision acquired legal force the 4th of March 2019, when Putin signed an executive order. See President of Russia, *Executive Order suspending Russia's compliance with the USSR-US INF Treaty*

7 President of Russia, *Meeting with Sergei Lavrov and Sergei Shoigu*, 2 March 2019

8 Hans M. Kristensen, *US Navy Instruction Confirms Retirement of Nuclear Tomahawk Cruise Missile*, Federation of American Scientists, 18 March 2013

with INF-ranges. President Putin approved Shoigu's request but insisted on not getting into an arms race and said the program should be carried out within the stated defense budget, which Shoigu confirmed.<sup>9</sup>

“Arms race” is obviously a relative term, but the rhetoric of president Putin is intelligible even from the fact that Russia has progressed far in its dedicated and INF-violating programme.

### *The USSR's investment in INF-missiles*

Soviet's quantitative growth of nuclear weapons accelerated in the 1960s. In the 1970s they reached a comparable level to the U.S., as they jointly had the breathtaking number of 50 000 operative or stored nuclear warheads.<sup>10</sup> Ten years later, the U.S. inventories were by already diminishing, while the Soviet Union reached its peak at 40 000 nuclear warheads.

The Warsaw Pact's (read the Soviet Union's) operational plan for a war with NATO in the 1960s and the first half of the 1970s built on massive use of battlefield tactical nuclear weapons in the initial phase, primarily against air bases and ports, but also against non-military targets and potentially even neutral countries.<sup>11</sup> The plan was understood to have been defensive in principle, but if war would break out, this was the most likely *modus operandi*.

In the Soviet Union, however, the environmental consequences from large scale use of battlefield nuclear weapons

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9 President of Russia, *Meeting with Sergei Lavrov and Sergei Shoigu*, 2 March 2019

10 Hans M. Kristensen and Robert S. Norris, *Estimated Global Nuclear Warhead Inventories 1945 – 2018*, Federation of the American Scientists, November 2018

11 Nicholas Watt, *Poland risks Russia's wrath with Soviet nuclear attack map*, The Guardian, 26 November 2005. See also The Baltic Initiative and Network, *Danish Belts were the link between the Baltic Sea and the Atlantic*. See also National Security Archive, *European Cities Targeted for Nuclear Destruction*, Parallel History Project on NATO and the Warsaw Pact, Press Release, 29 November 2001

had not been assessed in earnest.<sup>12</sup> This task was given in the 1970s to the professor in mathematics, Vitaly Tsygichko's Scientific-Technical Institute for Systems Studies (VNIISI). The findings were both unexpected and dramatic. Even the use of just a fraction of the planned quantities of nuclear weapons in the very initial phase of war, including the expected response from NATO, would entail extensive counterproductive consequences. The radioactive fallout would cause devastating loss of civilian lives in Eastern Europe. Furthermore, the usually prevailing western winds would cause so heavy radioactive exposure and eventual radiation sickness to the attacking armoured divisions of the Warsaw Pact that they would soon come to a halt.<sup>13</sup>

This fresh insight that the Soviet Union would not win a nuclear war conflicted with Marxist-Leninist dogma and could therefore not be accepted. However, Professor Tsygichko, did not tweak his results despite threats from the commander of the Warsaw Pact forces, Marshal Viktor Kulikov. Warsaw Pact nuclear training practices and procedures, however, continued as before which led to misinterpretations by the West.

In 1977, Marshal Nikolai Ogarkov became head of the General Staff. He understood the deeper meaning of the issues related to the nuclear doctrine. Consequently, he ordered his subordinates, primarily Colonel General Andrian Danilevich's department of planning to develop new

operational plans, including a radical decrease in reliance of nuclear weapons. According to Danilevich, the General Staff believed in 1977 that the conventional phase of a war could go on for five to six days. Nonetheless, two years later, they estimated that the operation "Into France" could be carried out conventionally, and in 1981 the general staff seriously thought that war could be waged conventionally altogether.<sup>14</sup>

During Ogarkov's time as chief of the general staff there was a fundamental shift in Soviet's operational methods. The doctrine was still formally defensive, but if war with the Western powers broke out, the Soviet Union would surely be victorious, due to its massive conventional army, with its highly capable elite units in very high readiness.<sup>15</sup> However, this would require a robust sub-strategic nuclear deterrence capability, which they had in their nearly 2 000 INF missiles. The INF flagship SS-20 Saber could project a direct threat to all the bigger cities of Europe, which the Soviet leadership believed would contribute in preventing NATO to seriously consider the use of nuclear weapons.

As known, NATO accepted the challenge and responded with the Dual-Track Decision in 1979, in which they offered the Warsaw Pact a mutual limitation of medium-range ballistic missiles and intermediate-range ballistic missiles. If the terms were not accepted, NATO threatened to deploy nuclear ballistic missiles and cruise missiles in Europe. The German chancellor Helmut Schmidt was the driving force behind this. The price for his strong leadership was the sacrifice of his political career. This was followed by huge demonstrations in Europe which solely focused on NATO and parts of the demonstrators even viewed the Soviet SS-20 missiles as tools for peace.

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12 See the material regarding prof. Vitaly Tsygichko in William Burr and Svetlana Safranskaya, *Previously Classified Interviews with Former Soviet Officials Reveal U.S. Strategic Intelligence Failure Over Decades*, 11 September 2009

13 Tsygichko's analysis was confirmed by Colonel-General Andrian Danilevich, one of the heads of the General Staff, Ogarkov's closest co-workers with responsibility of operative planning. General Danilevich: "By the 1970s we had concluded there was no chance we would survive. By the 1980s we further concluded that we would be destroyed by our own strike." Ibid., *Interview (John G. Hines) with Col.Gen. Andrian A. Danilevich*, 14 December 1992, p. 64

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14 Ibid. *Interview with Danilovitch*, 18 December 1990, p. 24

15 Yossef Bodansky, *Ogarkov tells how Soviets can win war in Europe*, The Washington Times, 23 July 1985, p. 1A

## What happened then?

When Mikhail Gorbachev came to power in the Soviet Union in 1985, talks with the U.S. resumed. Presidents Reagan and Gorbachev signed the INF treaty in December 1987. This came as a shock for the Soviet military leadership as Gorbachev thereby brought down the painstakingly built operative doctrine which had been in place since the Ogarkov era. Furthermore, General Danilovich believed both the INF and the START treaty to be unfair to the Soviet Union.<sup>16</sup> In the INF, the Soviet Union eliminated more than twice as many missiles as the U.S.

When the INF was almost implemented and the START treaty, which dealt with strategic nuclear weapons, was signed in July 1991, George H.W. Bush made a unilateral commitment to significantly reduce the U.S. arsenal of so-called non-strategic nuclear weapons, which soon resulted in the U.S. Army becoming nuclear-free. The U.S. Army still remains nuclear-free and even though the U.S. formally leaves INF on the 1<sup>st</sup> of August 2019, there are no plans to reintroduce “tactical” nuclear weapon capabilities in this service. However, the U.S. needs stronger conventional long-range firepower in all services as the U.S., in particular on the ground, has fallen behind Russia and China.<sup>17</sup>

Corresponding decisions were made in 1991/1992 by Gorbachev and Yeltsin, but as Putin came to power Russia went back to its former strategy. On the website of the Russian army’s Missile Troops and Artillery, its main task has long been described as to provide “the primary means of fire and nuclear destruction of the enemy during conduct of combined-arms operations”.<sup>18</sup>

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16 Stefan Forss, *Russian Nuclear Policy, Strategy and Doctrine*, in *Russia’s Military Strategy and Doctrine*, Glen E. Howard and Matthew Czekaj (eds.), Jamestown Foundation, Washington, D.C., 2019, pp. 217 – 218.

17 Sidney J. Freedberg, *US Gets Its Ass Handed To It In Wargames: Here’s A \$24 Billion Fix*, *Breaking Defense*, 7 March 2019

18 Ministry of Defence of the Russian Federation, *Land Forces, Missile troops and artillery*

Russia invests heavily in long-range dual-use missile systems in all services. This no doubt poses particular problems for the defense planning in the Nordic countries. The INF treaty was critical for Europe as it prohibited the ground-based ballistic missiles and cruise missiles between the range of 500 – 5 500 km, regardless of warhead types.

Cruise missiles and tactical-operational ballistic missiles are primarily conventional weapons, but they also fulfil a sub-strategic nuclear role. The fact that Russia has managed to put in place an operational plan which could be called Ogarkov’s plan 2.0, has come as an unpleasant surprise to the West. The plan includes an available and prepared army backed up by a spectrum of operationally significant long-ranged conventional weapons with nuclear options.<sup>19</sup>

The nuclear yields vary between mini nuclear weapons, with an explosive power similar to large car bombs (10 – 20 tons TNT), and “doomsday weapons” similar to the “Czar bomb” (100 megatons TNT). In the lower end of the spectrum, we have the “useable” nuclear weapons which are supposed to guarantee that the results of successful offensive military operations are preserved, and that war can be terminated on favourable terms due to the risk of an uncontrolled nuclear escalation. This doctrine, which is often called “escalate to de-escalate” was more appropriately described as an “escalate to win” doctrine by former U.S. Secretary of Defense Jim Mattis. This topic has been dealt with further in Jamestown Foundation’s recently published book *Russia’s Military Strategy and Doctrine*.<sup>20</sup>

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19 Russia has 126 Battalion Tactical Groups in constant readiness in the Ground Forces and Airborne Forces. IISS Military Balance 2019, p. 169.

20 Glen E. Howard and Matthew Czekaj, *Russia’s Military Strategy and Doctrine*, Jamestown Foundation and Brookings Institution Press, Washington D.C., 2019. For an analysis of Russia’s nuclear policy, strategy and doctrine, see chapters 6 and 7, Stefan Forss, *Russian Nuclear Policy, Strategy and Doctrine*, pp. 185 – 250; Stephen Blank, *Putin’s ‘Asymmetric Strategy’: Nuclear and New-Type Weapons in Russian Defense Policy*, pp. 251 – 301.



The development of the missile system 9K720 Iskander began already in 1988, just as the implementation of the INF treaty had only just begun. Iskander was based on the 9K714 Oka (SS-23 Spider), which was a subject for elimination in the INF. Developing the system went slowly and test launches began only in the mid-90s. Series production of the ballistic missile Iskander-M (9M723) system began by the end of 2000s and the first complete brigade was declared operational in 2010.<sup>21</sup> Soon, the cruise missile 9M728 Iskander-K (a.k.a. R-500) was added to the Iskander-M brigades. The Swedish Defence Research Agency FOI estimated that the cruise missile became ready for operational service in 2008.<sup>22</sup>

The real range of these cruise missiles significantly exceed the allowed range of 500 km. The cruise missile has a range which is estimated to be close to 80 percent of that of the Kalibr missile, i.e. around 1 500 kilometres. The reason why Iskander-K has barely been mentioned in the debate about Russia's violation of the INF treaty is because the U.S. apparently lacks evidence that the missiles have been tested to prohibited distances. According to the INF treaty, such tests only constitute legal proof of treaty breach.

The INF controversy between the U.S. and Russia concerns the Russian cruise missile 9M729, in NATO known as SSC-8. An article in *Frankfurter Allgemeine Sonntagszeitung* on the 10 February 2019, described how Russia have deployed four artillery battalions with the prohibited missile at four different locations with sixteen launchers in total, each with four missiles.<sup>23</sup> This was the start of a post INF era, where these longer ranged systems play a gradually stronger role.

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21 Stefan Forss, *The Russian Operational-Tactical Iskander Missile System*, National Defence University, Department of Strategic and Defence Studies, Working Paper No 42, 2012, pp. 9-10

22 Ulf Saxin, Kryssningsrobotar – En systemöversikt, FOI, June 2018, FOI--D0823—SE, pp. 28 – 29.

23 Thomas Gutschker, *Amerika plant kein Wettrüsten*, *Frankfurter Allgemeine Sonntagszeitung*, 10 February 2019

The strength of these land-based SSC-8/Kalibr units is still quite limited in comparison to the approximately ten Iskander brigades, with a total of more than 500 operational missiles. The closest ones are based about 100 kilometres south of St. Petersburg and in Kaliningrad. Additional Iskander brigades can be expected and gradually the Kalibr battalions will probably be upgraded to brigades.

TASS announced on 23 February that an advanced version of the cruise missile 3M-54 Kalibr – which according to estimates by the Swedish Defence Research Agency has a range of 2000 – 2 500 km<sup>24</sup> – is planned. The new missile, Kalibr-M, is supposed to have a range of 4 500 km and will also be deployed with the Ground Forces.<sup>25</sup> The Russian strategic bombers' newest cruise missile Kh-101, which has been operationally used in Syria has that range. The Kalibr-M most likely will build on the technology and experience of Kh-101.

In addition to these programs, Russia has several other weapon projects in development. One example is the Kh-47M2 Kinzhal which is an airborne version of the ballistic missile Iskander-M and can be carried by aircrafts such as MiG-31 and the bomber Tu-22M3 Backfire. Its range – which on land is more than 500 km and theoretically beyond 700 km<sup>26</sup> – could be about 2000 km in the airborne version.<sup>27</sup> Other Russian projects includes a

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24 Ulf Saxin, Kryssningsrobotar – En systemöversikt, FOI, June 2018, FOI--D0823—SE, pp. 28 – 29

25 TASS, *Russia to develop land-based Kalibr-M missile – source*, 23 February 2019

26 Stefan Forss, *The Russian Operational-Tactical Iskander Missile System*, National Defence University, Department of Strategic and Defence Studies, Working Paper No 42, 2012, pp. 9-10

27 Dave Majumdar, *Russia: New Kinzhal Aero-Ballistic Missile Has 3,000 km Range if Fired from Supersonic Bomber*, *National Interest*, 18 July 2018. For a short summary of the Russian nuclear programs, see Roger McDermott, *Gerasimov Unveils Russia's 'Strategy of Limited Actions'*, *Eurasia Daily Monitor*, 6 March 2019

nuclear powered cruise missile, the Burevestnik<sup>28</sup>, which in practice has an unlimited range and an unmanned submersible vehicle, Poseidon, carrying a very large nuclear device. These programs are unique to Russia.

The U.S. has reluctantly admitted the necessity of a new strategy when it comes to its nuclear policy and strategic deterrence. The U.S. strategic nuclear weapons are in the final phase of their life-cycle and need to be replaced.<sup>29</sup> Dealing with Russia's dominance in the sub-strategic area is, however, is quite another matter as it needs to be addressed within the framework of USAF and USN resources. The relatively small amount of 180 "tactical" nuclear weapons in European NATO countries will not deter Russia. The combat aircrafts are old and their ability to penetrate Russia's heavily defended airspace must be regarded low.

Only the U.S. strategic stealth bomber B-2 has a real ability to project low-yield nuclear threats in heavily contested airspace. But the B-2s are few, no more than 20, and maintaining them is demanding. Replacement of the aging B-2s with the new B-21 Raider is expected to begin in the mid-2020s.<sup>30</sup> The development of the new nuclear bomb B61-12 with several yield options (0,3 – 50 kilotons), is almost finished and will possibly be available in 2020.<sup>31</sup> In addition, a new low-yield nuclear warhead, W76-2, is likely to be introduced on strategic Trident submarines, unless the plans are blocked in the U.S. Congress.<sup>32</sup>

The U.S. dilemma is the need to use strategic weapons to achieve a counterweight to Russia's dominance in the

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28 Ankit Panda, *Russia Conducts Test of Nuclear-Powered Cruise Missile*, The Diplomat, 6 February 2019

29 Franklin C. Miller, *Strategic Deterrence, the SSBN Force and the Columbia SSBN's Essential Contribution*, RealClear Defense, 25 February 2019

30 U.S. Department of Defense, *Nuclear Posture Review 2018*, February 2018

31 Ibid. See also Air Force Technology, *B61-12 Nuclear Bomb*

32 Ankit Panda, *First New US Submarine-Launched Ballistic Missile Warhead Produced*, The Diplomat, 14 March 2019

sub-strategic area, which according to some experts can be seen as a potentially dangerous "mission creep" from the sub-strategic to the strategic domain.<sup>33</sup> This obvious asymmetry between the U.S. and Russia is, as mentioned above, due to the post-Cold War non-nuclear status of the U.S. Army which will continue. However, Jim Mattis, the former U.S. Secretary of Defense, effectively dismissed the idea of dividing nuclear weapons in sub-strategic – "tactical" – and strategic categories.<sup>34</sup> The use of nuclear weapons is always a strategic decision.

## Conclusions

Coming to grips with the problems related to the likely, but hopefully only temporary demise of nuclear arms control is quite difficult. For small non-nuclear countries, neighbours of a nuclear superpower, this presents particular problems. Good solutions are in short supply.

Arms control in general, and nuclear arms control in particular, thrives when the parties involved recognize mutual national benefits. These lacking, national security always takes priority over other more general ideological motives, such as belief in the benefits to mankind of general disarmament.

Already in the 1980s, Reagan and Gorbachev, realized that the heavy investments in nuclear weapons had been a mistake. Instead they both genuinely worked for a nuclear free-world, which most American presidents, including Obama, have supported.<sup>35</sup> However, as Putin came to power, Russia changed its attitude. In 2008, the then-UN Ambassador of Russia, Anatoly Antonov, explained to the special adviser

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33 Julian Borger, *US nuclear weapons: first low-yield warheads roll off the production line*, The Guardian, 28 January 2019

34 Richard Sisk, *Mattis: There Is No Such Thing as a Tactical Nuke*, Military.com, Defense Tech, 6 February 2018. "I don't think there's any such thing as a tactical nuclear weapon. Any nuclear weapon used anytime is a strategic game changer."

35 Stefan Forss, *Russian Nuclear Policy, Strategy and Doctrine*, in Howard and Czekaj (ed.), *Russia's Military Strategy and Doctrine*, p. 186.

of the Secretary General Ban Ki-moon that Russia no longer agreed on Gorbachev's vision. What would Russia be without nuclear weapons, he asked rhetorically.<sup>36</sup>

Russia has, through its official policy and military aggressions in the Baltic Sea region, signaled nuclear threats also towards small countries. A well-known incident was the "Russian Easter", taking place at Good Friday 2013, when Russian Tu-22M Backfire bombers simulated the use of nuclear weapons against Sweden. The Russian ambassador in Copenhagen, Michail Vanin, in March 2015 threatened to target Denmark with nuclear weapons if the units of the Danish navy joined NATO's missile defence.<sup>37</sup> In October 2016, the Vice President of the Duma Committee of defence and security, Frants Klintsevich, said that the around 300 American Marine Corps who had arrived in Norway posed a threat to Russia. Hence, Norway could be added to the list of targets for Russia's strategic weapons.<sup>38</sup> The nuclear threats do not seem to be in proportion to the measures taken in the Baltic Sea region and motivate such a language. Unfortunately, this is also a representation of Russia's categorical resistance in giving so called negative guarantees to desist from threats or use of nuclear weapons against nuclear free nations who have joined the treaty on the non-proliferation of nuclear weapons (NPT) and who fully live up to their obligations. Russia's attitude is here diametrically opposite to the U.S. approach.

The Russian leadership now believes it has reached an advantageous position in the field of nuclear weapons. Categorically, Russia rejected Obama's attempts to continue the START procedure regarding strategical nuclear weapons with an aim to reduce the number with a third, down to 1000 nuclear warheads in operative use. Foreign Minister Lavrov, refused Obama's last invitation in the summer of 2013. Hereafter, Russia only agreed to such discussions if all three other recognized nuclear

powers participate.<sup>39</sup> Anatoly Antonov, who led Russia in the negotiations of the new START-treaty, recently made clear that Russia will not extend the new START treaty, which expires the 5<sup>th</sup> of February 2021.<sup>40</sup>

The future security situation is uncertain, and Europe has not yet even realized this reality. Appeasement towards Russia solves nothing, which Reagan concretely and successfully proved in the 1980s. A repeat of that formula to negotiate from a position of strength may be needed once again.

It is prudent also to recognize that only the United States has the resources to counter Russia's nuclear posturing and provide its allies and friends with a credible nuclear deterrent. British and French nuclear forces unfortunately can't assume any significant role in this regard.

The Nordic countries, alliance members and partners alike, should improve their conventional military capabilities in order to significantly increase their collective defense preparedness and threshold capabilities. A clear expression of intent to defend themselves in all circumstances is imperative, as is their will not to give in to nuclear blackmail and coercion.

The fear of an unrestricted nuclear arms race in Europe is overblown. A repeat of the NATO double-track decision is out of the question. New U.S. ground-based nuclear missiles will not be deployed in Europe. A conventional arms race is, however, something else. The Russian dual-use ballistic missiles and cruise missiles need to be countered.

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36 Ibid., p. 189.

37 The Local, *Russia delivers nuclear threat against Denmark*, 21 March 2015

38 The Local, *'Norway will suffer': Russian nuclear threat over US Marines*, 31 October 2016

39 Stefan Forss, Russian Nuclear Policy, Strategy and Doctrine, in Howard and Czekaj (ed.), *Russia's Military Strategy and Doctrine*, p. 191.

40 Patrik Tucker, *New New START a Nonstarter: Russian Ambassador*, Defense One, 12 March 2019