



Reimagining Risk Reduction

Adapting Cold War Tools to Manage 21st Century Strategic Instability

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Cover: US Secretary of State George Shultz and Soviet Foreign Minister Eduard Shevardnadze sign the first NRRC Agreement, 15 September 1987. Credit: US Department of State.

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Introduction and Background: Why Risk Reduction is the Name of the Game Again

Historically, nuclear risk reduction measures and arms control agreements have developed in parallel, with the former often enabling and strengthening the latter's chance to succeed. Risk reduction has largely sought to address the possibility of misperception and miscommunication, which could provoke nuclear war when none was intended. Arms control has aimed to stabilize the bilateral US-Soviet/Russian strategic balance, and thus discourage arms racing dynamics and either side's ability to launch intentional large-scale nuclear strikes. To date, risk reduction was primarily achieved through efforts to reduce ambiguity in case of developments the other side might have considered dangerous or provocative as well as provide tools to clarify situations that gave rise to suspicions. These included potential false warnings about an ongoing attack by the other side.

Risk reduction measures agreed during the Cold War between the United States and the Soviet Union, the primary geopolitical rivals and main leaders of opposing blocs, included measures such as notifications about activities that could be misinterpreted by the other party, dedicated communication links that could help quickly clarify situations, and enhanced transparency through site visits, scientific exchanges, and more. During the second half of the Cold War, the United States and the Soviet Union, as well as NATO and the Warsaw Pact, developed a reasonably well-structured system of risk reduction, which enjoyed further development in the decade after its end. This system served as an inspiration for stabilizing conflict and crisis scenarios between other nuclear-armed adversaries such as India and Pakistan. Unfortunately, the progress achieved subsequent to the Cold War stemmed, in hindsight, from inertia from the previous decades both politically and conceptually rather than a window into a new, more stable and safer world.

The deterioration of US-Russian and wider European risk reduction arrangements has been exacerbated by the rise of China as a major global player with equally global ambitions. China has recently pivoted its nuclear strategy by launching a buildup of its strategic nuclear forces, in addition to its already impressive arsenal of dual-capable theater-range missiles, with the end goal of that buildup unknown. The currently reigning assumption is that others including the United States, and perhaps also the United Kingdom and France, may also need to build up like China and Russia. This assumption has been paired with characterizations of NATO's nuclear deterrent as not fit for purpose and in need of transformation through increased capabilities. The resulting picture, yet to be completely colored in with specifics, leads one to believe that countries will find it difficult to restrain themselves from deepening arms racing dynamics.

In turn, in today's era of great power competition, formal arms control that results in long-term caps on or cuts to strategic arsenals is unlikely in the near-to-medium term. The most complicating new element of the picture is the aforesaid need to balance a triangular relationship (in contrast to the bilateral balance that dominated the Cold War), in which the United States will be forced to contain both Russia and China while the latter two also find themselves in a residual mutual deterrence relationship. In addition to the quantitative arms race under way (for now primarily in China), nuclear-armed countries are also revisiting the qualitative parameters of their arsenals while discourse on so-called "tactical" or "sub-strategic" nuclear weapons hangs in the background. In part, these trends are driven by progress

in missile defense (in the United States, but increasingly also in Russia, China, and other countries such as Pakistan and North Korea) as well as conventional strike capability. Such trends are pointing towards the possibility that nuclear weapons may again be seen as having more usability than simply being reserved for the most extreme circumstances. Russian reliance on nuclear weapons in less-than-global conflicts for purposes of "escalating to de-escalate" is well known. China may be contemplating similar scenarios. In the meantime, the United States discusses both conventional and nuclear countermeasures to annul the Russian "de-escalation" options. In other words, the number and variety of pathways towards nuclear use has increased and will likely increase further through the end of this decade and perhaps into the next, meaning that buy-in for risk reduction tools that are built by, work for, and are trusted by all involved parties will become increasingly critical.

Our research demonstrates that the risk reduction toolbox borne out of Cold War military and political arrangements does not provide sufficient coverage for the much broader variety of contingencies, especially escalation of limited conventional conflict, nor sufficient infrastructure to prevent or de-escalate nuclear crises and conflicts. This is hardly surprising because during the Cold War attention was centered on prevention of a global nuclear war between two key adversaries, the United States and the Soviet Union. Consequently, risk reduction efforts concentrated on measures to prevent conflict between these two countries (primarily actions that could be interpreted as a large-scale attack) and promote communication between them.

Nuclear-armed countries are not all linked up through the same kinds of mature structures built between the United States and Soviet Union/Russia. The tools that do exist outside the US-Russian dyad are often bilateral if they exist at all, whereas nuclear crises and conflicts today could easily start as or quickly turn into multilateral ones. For example, limited, patchy bilateral channels between nuclear weapon states means that there is no current way for political or military leaders to quickly, securely speak to all other bilateral counterparts, much less contact several of them simultaneously. The multiplicity of possible escalation paths compounded by the complexity of emerging technologies, which engender mistrust by having the power to create false information and multimedia, such as AI-generated "deep fake" audio and video, means that countries will need to revisit how to ensure that crisis communication channels remain as resilient as possible.

Preventing nuclear use is now a major focus of the international community, and while disarmament is the ultimate way to reduce nuclear risks once and for all, geopolitical circumstances are highlighting the need to stay steady through this current period until formal arms control can resume and bring in new players. The return of "risk reduction" as a major theme in nuclear policy circles can help ensure that we have the guardrails in place to muddle through this period of extreme tension without witnessing a nuclear catastrophe. Ultimately, these risk reduction measures are meant to be interim in nature until countries are able to re-focus on more meaningful steps towards disarmament obligations. In that sense, just as formal arms control measures are mutually reinforcing with disarmament, so are risk reduction measures.

Much laudable work has been done by nuclear weapons states and non-nuclear weapons states alike during the last NPT Review Cycle (2015-2022) through the Stockholm Initiative,¹ the Creating the Environment for Nuclear Disarmament (CEND) forum,² and more to put concrete ideas forward. Most notably, the nuclear weapons states themselves produced a working paper through the P-5 Process at the end of 2021 which outlined three key areas for future work on risk reduction, pointing to the need for actionable measures.³ For the purposes of this paper, the P-5 are primarily referred to due to their

¹ [Stockholm Initiative for Nuclear Disarmament](#) (2022), "A nuclear risk reduction package".

² [US Department of State](#) (2024), "CEND Subgroup 3 on Interim Measures to Reduce the Risks Associated with Nuclear Weapons".

³ [China, France, Russian Federation, United Kingdom, United States](#) (2021), "Strategic risk reduction".

status as the nuclear weapons states under the Non-Proliferation Treaty (NPT) rather than their status as permanent members on the UN Security Council. Despite the overall P-5 agenda becoming largely overtaken by events in Ukraine shortly after the aforesaid paper was released, risk reduction dialogue has continued based on this previous work with government expert-level meetings in Dubai, Geneva, New York, Riyadh, and Vienna. In addition, a group of diverse states have also decided to carry this work forward during the current NPT Review Cycle to build on previous efforts, which was exemplified by a joint statement made at the 2024 NPT Preparatory Committee meeting in Geneva.⁴

While the international community continues to call for progress on risk reduction, ultimately the power lies in the hands of the countries that need to maintain, update, and create tools for their own use. Formal dialogue on risk reduction between the five nuclear-weapons states under the NPT has reached a saturation point, as Russia (and to a lesser but similar degree China) has made it clear that they are unwilling to discuss risk reduction further in terms of technical steps. This resistance from Moscow and Beijing has continued even though Russia has preserved and used existing risk reduction arrangements despite its suspended implementation of New START, the only remaining US-Russia bilateral treaty on strategic arms, and China has restarted high level dialogue with Washington (although rejected future talks on nuclear issues for now).

Russia has continued to take the stand that the focus amongst the P-5 should be on the wider “strategic equation” that exists between them and the root causes of risk. In effect, Russia has resurrected a pattern characteristic of the Soviet Union, which preferred addressing broad political issues before practical ones. China has similar preferences, insisting on removal of root causes of conflict, which assumes major concessions on part of the United States and its allies, rather than regulation and management of military confrontation to prevent escalation. As stated in China’s working paper on risk reduction submitted to the August 2023 NPT Preparatory Committee meetings, there are “no universally applicable measures to reduce nuclear risks, due to the vast differences in the nuclear capabilities, nuclear policies and the security environment of nuclear-weapon States”.⁵ Deep divisions on the topic of risk reduction do not mean that P-5 dialogue on this subject will cease, especially as all sides see the value in at least continuing discussions on doctrinal transparency. But it is clear that there will not be movement towards additional concrete steps for a while.

However, time is of the essence and the P-5 need to walk and chew gum at the same time. The stakes are simply too high for countries to wait before unpacking the current risk reduction toolbox and seeing what needs to be upgraded, multilateralized, replaced, or created.

Our conclusions suggest that an expanded toolbox of risk reduction, confidence building, and transparency measures should come hand in hand with a resilient risk-reduction network connecting at least the P-5 and allowing for a more formalized, streamlined, responsive, flexible communication network connecting any two of the P-5 or all of them at the same time.

It is no longer possible to rely on diplomatic channels, which are still used by some P-5, because transmission, processing, and response times are simply too long. Similarly, traditional hotlines do not support sufficient speed of communication and response times either. A system fitting the current security environment would need to allow for a broad variety of notifications, requests for information, and clarifications, as well as other kinds of communication as required by a quickly changing and technically complex environment. The proliferation of conflict scenarios in the present security environment requires a significantly expanded range of notifications and transparency measures, which

⁴ [Several States](#) (2024), “Reducing the Risk of Nuclear Conflict”.

⁵ [Ministry of Foreign Affairs of the People’s Republic of China](#) (2023), “Working Paper on Nuclear Risk Reduction submitted by China to the Preparatory Committee for the 2026 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons”.

should help reduce uncertainty and limit the potential for escalation. The toolbox should not be limited to the agreed types of measures, however, but allow also for exchange of contingency-specific data and clarifications as need arises.

Risk reduction nowadays and in the future cannot be limited to tools alone, such as transparency, notifications, or a communication network.

The P-5 need to build a shared risk reduction culture that matches today's geopolitical and technical realities and also takes into consideration resulting anxieties so measures are feasibly implemented and actually used. At the heart of this culture is the readiness to not only communicate in times of crisis, but also in times of relative stability, to avoid crisis situations, and cooperate in quickly resolving crises if they emerge. There is no point in updating pre-existing tools or building new tools if no one will use them, especially under duress.

Eventually, this communication network and the risk reduction culture should expand beyond the P-5 and also include other key decision-making centers, such as NATO's Headquarters in Brussels, and in the future other nuclear-armed states, first and foremost India and Pakistan. The two countries have bilateral risk reduction and confidence building measures, there are also hotlines between India and some of the P-5, but it would be desirable to make them full participants of the network. A further expansion of the communication network – and the risk reduction culture – to key non-nuclear states should not be ruled out either, although at the moment this appears a more distant goal.

At its core, this paper aims to showcase that risk reduction is a long-term undertaking in constant need of fine-tuning. In order for a true risk reduction network with accompanying institutions, communication channels, and a common culture that promotes their use to take hold, it will take years of small steps, perhaps often unilateral and voluntary, before formalized agreements on reciprocal, concerted efforts are possible.

Part One: Overview of Past Risk Reduction Measures and Networks

The 1962 Cuban Missile Crisis brought home the realization that nuclear war between the United States and the Soviet Union could happen unintentionally as a result of gross miscalculation and failure to predict the adversary's reaction to moves that were not intended to provoke war. The Soviet Union deployed missiles in Cuba to bolster deterrence (the balance of strategic forces at that time favored the United States, according to different estimates, from 7:1 to 20:1), but that step was seen in Washington as an immediate threat requiring tough reaction. That crisis also demonstrated that both sides were well set up for war, but poorly equipped to prevent a crisis when neither wanted one. The Cuban Missile Crisis also came up on the heels of several false warnings in the 1950s when the other side was perceived as launching a large-scale attack when nothing of the kind was happening.

Realizing these risks, both sides felt the need to create safeguards against similar occurrences in the future. Over subsequent several decades they put in place a reasonably strong and well-developed network of measures to prevent war resulting from misunderstanding or accident as well as the means to quickly communicate in the event of a crisis. That network consisted of the following main elements:

1. Agreements to avoid launches of strategic missiles that could be perceived by the adversary as beginning of an attack and to provide notifications about any launches of this category of missiles;
2. Agreements to prevent conflict in Europe, which could escalate to a direct military confrontation between the East and the West including potentially nuclear use;
3. Direct communication links between political authorities and militaries to quickly clarify uncertainties and resolve an unintended crisis; and
4. Complementary agreements to reduce the risk of incidents on and over the high seas from escalating to unintentional war.

Underlying these efforts was a shared interest in avoiding nuclear war and a shared willingness to act on it. Although shared interest alone is not sufficient to produce tangible results, the memory of the 1962 crisis as well as other, smaller-scale crises, created sufficient political will to act on that shared interest, engage in negotiations, compromise as necessary, ensure that the outcomes entered into force, and then faithfully implement them.

The bulk of risk reduction measures were negotiated during the 30-year period from the early 1960s to the late 1980s, a time that could be classified as "mature" Cold War. Underlying US-Soviet cooperation in that issue-area was a shared understanding of a relative status quo. While both superpowers and alliances (NATO and other US-led alliances as well as the Warsaw Pact) continued to probe each other and seek to expand influence on the periphery, they appeared to recognize the relatively stable bipolar structure of the international system and the grave danger of entering direct conflict. China, however, was an exception to this process, as it remained outside dialogue on risk reduction during the Cold War and its involvement in such regimes afterwards has been minimal.

Another feature of the Cold War period of risk reduction is the apparent difference in the approaches of the two countries. The United States emphasized the technical, practical aspect of risk reduction

measures – specific notifications, transparency, communication channels, etc. The Soviet Union, while receptive to technical arrangements, also paid significant attention to the more general, political side of nuclear war prevention, such as an agreement on the “code of conduct” of the two countries, elements of which were reflected in the 1971 Accidents Measures Agreement and to an even greater extent in the 1973 Prevention of Nuclear War Agreement. It can even be said (also keeping in mind cases from other arms control and confidence building negotiations) that, for the Soviet Union, agreement on principles was a necessary prerequisite for more practical arrangements. Acceptance by the United States in the 1970s of agreements on principles of policy, which were unavoidably general, often vague, and subject to interpretation, can be treated as a concession to obtain more tangible risk reduction and arms control measures. This experience may once again prove useful – both in relations with Russia, but more importantly, China, which also displays strong interest in an agreement on general principles of relations.

I. Risk Reduction Measures Among Nuclear Weapon States

Hotlines

Direct Communication Links (DCLs), commonly known as hotlines, are established between relevant officials (usually heads of states and/or their militaries) to facilitate urgent communication so that uncertainties, which could result in a crisis where none was intended, could be resolved quickly as well as to provide a means of communication after a crisis has already started. The first hotline was established by the United States and the Soviet Union on the heels of the 1962 Cuban Missile Crisis, which demonstrated an urgent need for direct, fast communication between the superpowers over a dedicated, confidential channel. Subsequently, such hotlines have proliferated and are particularly common between countries whose relations are fraught and could lead to a serious crisis if incidents are not addressed and resolved or managed in a timely manner.

The effectiveness of hotlines depends on the willingness of parties to maintain communication, which has not always been the case. For example, the Russian Ministry of Defense refused to answer calls from the US Department of Defense for several months following the Russian invasion of Ukraine in 2022; China is known to have refused calls from the United States at senior levels, India did not call Pakistan after accidentally firing a BrahMos missile into its territory in 2022, and North Korea has periodically disabled its hotlines with South Korea.

US-Soviet/Russian Hotline Agreements

20 June 1963: *Memorandum of Understanding Regarding the Establishment of a Direct Communications Link* commonly known as the Hotline Agreement. Designed to help speed up communications and prevent the possibility of accidental nuclear war, it established a direct communication link with two terminals, in Washington and Moscow. The original hotline used a full-time duplex wire telegraph circuit through Europe and a fallback radiotelegraph option through Tangier. The line became operational in August 1963. In 1971, the hotline was shifted to two satellite communications circuits (one using the Intelsat system and another the *Molniya II* system); the 1963 wire telegraph was retained as a backup. Satellite communications circuits became operational in January 1978. In July 1984, the *Agreement to Expand the Direct Communications Link* added a facsimile transmission capability (operational in 1986). In 2007, the hotline was upgraded again: a fiber optic cable replaced the old backup cable allowing for almost instantaneous chat and e-mail communication.

15 September 1987: *Agreement on the Establishment of Nuclear Risk Reduction Centers (NRRC)*; see separate section below.

Other Hotline Agreements⁶

1966: The **Soviet Union and France** established a direct communications link between Paris and Moscow.

1967: The **Soviet Union and the United Kingdom** agreement on a direct communications line was set up between Moscow and London.

1971: The **Inter-Korean hotline** was established and subsequently additional lines added; today it consists of over 40 telecommunication lines, 33 of them through the Panmunjom Joint Security Area within the Demilitarized Zone.

1971: **India and Pakistan** set up a hotline between their Directors General of Military Operations (DGMOs) which did not become routinely operational until the 1990s. In 1989, a hotline between the Prime Ministers was created. In 2005, a hotline between foreign ministries was created specifically for the prevention of nuclear incidents. In 2011, India and Pakistan set up a “terror hotline” to warn about possible militant attacks.

1998: A **Russia-China hotline** was established per agreement reached in 1997 for communication between heads of state. In 2008, this hotline was complemented with a separate hotline between Ministries of Defense.

1998: The **United States and China** agreement on establishment of a hotline (operational in June 1988). In 2008, it was complemented with a military hotline between the US Department of Defense and the Ministry of National Defense of China. In 2015, an additional “military crisis notification mechanism” for audio and video defense links was established as well as a so-called “space hotline” to share information and prevent misunderstanding in space. In 2020, the US and China convened a bilateral Crisis Communications Working Group for the first time, involving key defense and military officials. In early 2024, they agreed to hold another meeting rebranding it the Crisis Communications and Prevention Working Group, and held it in October 2024.

2008: **South Korea and China** set up a telephone hotline between their navies and air forces to help prevent accidental clashes. In July 2014, they additionally established a high-level hotline between their defense chiefs

2010: The Prime Ministers of **China and India** agreed to create a hotline to avoid confrontations over contested borders in the Himalayas. In 2018, they established in addition a military-to-military hotline.

2015: **NATO and Russia** revived a crisis hotline between chief military leaders building on previous Cold War communication channels which remains intact. In 2021, Russia offered in its draft treaty to NATO a hotline (understood by experts to be between the Russian President and NATO Secretary General) and in NATO's response this was the only provision it responded to positively (but no such civilian hotline has been created yet).

⁶ Leah Walker and Andrew Facini (2022), “Atlas of Crisis Communications: Nuclear States”, Institute for Security and Technology (IST).

2015: **China and Vietnam** established a bilateral hotline between the countries' defense ministries, and a naval hotline was created in 2024.

2015: The **United States and India** established a bilateral hotline.

2015: **China and Taiwan** established a hotline as an emergency tension-reducing mechanism between officials responsible for cross-Strait affairs (director of the Taiwan Office and minister of Mainland Affairs Council, respectively).

2023: The **United States, Japan, and South Korea** established a trilateral hotline between their National Security Councils.

2024: **China and the Philippines** established a hotline between the presidential offices and at other levels to de-escalate maritime issues such as those in the South China Sea.

Nuclear Risk Reduction Centers

American and Soviet/Russian Nuclear Risk Reduction Centers (in the United States, since 2021, the National and Nuclear Risk Reduction Center) were established by a bilateral agreement signed in September 1987 and began operation in April 1988 as the main node to transmit notifications pursuant to US-Soviet/Russian arms control treaties and agreements – initially the 1987 Intermediate Nuclear Forces (INF) Treaty and 1988 Ballistic Launch Notification Agreement as well as for subsequent arms control treaties, including the latest, the 2010 New START Treaty (since the Russian suspension of that Treaty in 2023, transfer of notifications stopped).

NRRCs also served three post-Soviet state-parties to the INF Treaty: Belarus, Kazakhstan, and Ukraine. After US withdrawal from the INF Treaty in 2019 and its termination in 2020, Belarus decided to end the direct line with the United States, but Kazakhstan and Ukraine continued its operation seeing more value in such a link than one treaty. For example, in 2024, the US and Kazakhstan signed an agreement between the US NNRRRC and the Kazakh Ministry of Defense to create a secure channel to exchange notifications on international security matters. Russia has not established similar links to these countries.

In 1991, both the United States and Russia also gave their NRRCs the function of supporting notifications for multilateral regimes under the auspices of the OSCE, the Vienna Document and the CFE Treaty. In 1997, they were also given responsibility for the newly entered into force Open Skies Treaty and for the 1993 Chemical Weapons Convention. In the early 2000s, the mandate of NRRCs was expanded to notifications under the Hague Code of Conduct (HCoC).

The 1987 NRRC Agreement also stipulates that “the Centers may be used for the transmission by either side of additional communications as a display of ‘goodwill’ and with a view to building confidence.” This provision effectively makes them a flexible instrument for interaction on a broad range of issues, including those outside formal bilateral and multilateral regimes. The United States proposed establishment of NRRCs with China, but Beijing did not show interest. As China has not established an analogue to the American and Russian nuclear risk reduction centers, notifications between Russia and China (see below) are being transmitted using more traditional channels.

Ballistic Missile Launch Information

US-Soviet Union/Russia

1971: *Accidents Measures Agreement*: advance notification about any planned missile launches targeted outside national territory in the direction of the other party or about any alert or malfunction of their early warning systems. This agreement is still in force.

1979: *Strategic Arms Limitation Treaty (SALT II)*: advance notification about multiple ICBM and SLBM launches or about single ICBM or SLBM launches with impact areas outside national territory.

1988: The *Ballistic Launch Notification Agreement* provided for mandatory advance (not less than 24 hours) notifications about any launch of an ICBM or an SLBM. Most recently, the US notified Russia about its November 2024 Minuteman III ICBM test launch and Russia also notified the US about its launch of an *Oreshnik* intermediate-range missile on the Ukrainian city of Dnipro a few weeks later.⁷ These notifications were exchanged through nuclear risk reduction center channels.

Russia/China

2010: *Russia-China agreement* (extended in 2020 for another 10 years) provided for advance (24 hours) notification about ballistic missile launches. This agreement has two differences from the 1988 US-Russian agreement: it applied only to launches in the direction of the other side (thus repeating the 1971 US-Soviet agreement) and applied to ballistic missiles with the range of 2,000 km or more (beyond the scope of the 1988 US-Soviet agreement and similar to the 1971 one). Both China and Russia keep technical arrangements confidential; they are likely transmitted through the diplomatic or the military-to-military channel.

US/China

2016: *US-China talks* under the auspices of the US-China Strategic and Economic Dialogue led to an agreement to discuss additional annexes to a 2014 bilateral memorandum of understanding on notification of major military activities, including a way to inform the other party of ballistic missile launches.⁸ However, the Trump administration suspended that particular dialogue in 2017. The Biden administration attempted to revive talks with China on this subject both bilaterally and through the P-5 Process, but Beijing has not shown interest. However, it is worth noting that China did inform the US of an ICBM launch in September 2024. The US government responded positively to the advance notification and reciprocated when they did their own launch several weeks later.

The Hague Code of Conduct (HCoC)

The HCoC, originally known as the International Code of Conduct against Ballistic Missile Proliferation, was opened for signature in 2002 and is a politically binding regime, which aims to curb the proliferation of ballistic missiles capable of delivering weapons of mass destruction as well as discourage development, testing, and deployment of such missiles. Currently, 145 states participate in HCoC (out of the P-5, China has not subscribed). The regime includes a range of transparency measures, such as advance notifications about launches (including tests) of ballistic missiles and space-launch vehicles (SLVs) as well as annual declarations of policy on ballistic missiles and space launch vehicles, data on launches in the previous year, and generic classes of missiles launched. HCoC does not apply to cruise

⁷ [Vandenberg Space Force Base](#) (2024), "Unarmed Minuteman III Test Launch to Showcase Readiness of U.S. Nuclear Force's Safe, Effective Deterrent".

⁸ [US Department of Defense](#) (2014), "Memorandum of Understanding Between the United States of America Department of Defense and the People's Republic of China Ministry of National Defense on Notification of Major Military Activities Confidence-Building Measures Mechanism".

missiles or UAVs. HCoC does not include an organization, but Austria serves as the point of contact for its members.

Conclusions

During the Cold War, the United States and the Soviet Union agreed on a strong set of risk reduction measures, joined in part later by other nuclear weapon states, primarily in two areas:

- First, measures to avoid misperception or misunderstanding to prevent the scenario considered most likely during that time – direct strategic attack by one country at the other. At first, these measures involved group launches in the direction of the other party, but then developed into notifications about every launch of strategic ballistic missiles, which were perceived as the main tool of nuclear war.
- Second, means for fast reliable communication to quickly clarify situations which could cause concern of one of the sides (such as enhanced alert level of strategic forces or malfunction of early warning systems); direct high-level communication could not only be used to provide assurances that no attack was underway, but also help quickly engage in dialogue to resolve any unintended crisis (bearing in mind the painful experience of the Cuban Missile Crisis, when it took considerable time to find options for direct confidential dialogue). In principle, direct communication link(s) could also help resolve other, lower-level crises, such as small-scale confrontation in Europe or in the Middle East.

These measures were determined by the expectation that any incident that could be misinterpreted by the other side as the beginning of an attack could lead to a large-scale nuclear war and, moreover, the essentially “trigger-happy” posture of both the United States and the Soviet Union. Effectively, they reflected a high level of shared fear of conflict, which was widely believed to most likely end in a global catastrophe. The combination of advance notifications and robust communication links was reasonably adequate for prevention of these contingencies.

They also reflected the shared understanding that there was rough parity between the two sides at least in strategic nuclear weapons, which ruled out chances for even a remotely successful first strike and were driven by the desire to preserve the status quo – perhaps far from a perfect situation, but vastly better than the risks stemming from unacceptably high uncertainty and risk of misunderstanding and misinterpretation. It is indicative that similar measures were absent between the Soviet Union, on the one hand, and US nuclear allies, United Kingdom and France, on the other: they were simply not needed because the “nuclear world” was bipolar; hotlines between Moscow and London as well as between Moscow and Paris were primarily political rather than operational.

The continuing relevance of Cold-War-era risk reduction measures was demonstrated by the Black Brant incident in 1996. The launch of a Norwegian research rocket was misidentified by the Russian early warning system and its parameters fit one of the possible scenarios (developed still during the Soviet period) of the first phase of an American strategic attack. Consequently, the command-and-control system of Russian strategic forces was activated. The incident was quickly resolved internally within the Russian system, making contact with the United States unnecessary, but it is clear that ballistic missile launches could result in a serious incident for primarily technical reasons even when political relations between the two leading nuclear powers are overwhelmingly positive.

Risk Reduction Measures in Europe

Complementary to risk reduction measures between nuclear weapon states is a system of risk reduction and confidence and security building measures (CSBMs) in Europe. During the Cold War, Europe was at the center of the East-West stand-off fraught with a theater-level conflict, which could quickly escalate to a nuclear, including strategic, level; hence measures were needed to prevent unintended flare-ups. Development of CBMs began in the 1950s, as the Helsinki Talks came out of the Warsaw Pact offer for talks which was accepted by NATO due to the Harmel Report in 1968.⁹

The Helsinki Final Act (1975) contained a set of relevant measures, including advance notifications about large-scale exercises. The exercise notification agreement in the Helsinki Final Act was then expanded into the **Stockholm Document (1986)** following the 1983 Madrid Mandate (which defined CSBMs for the first time). The Stockholm Document significantly expanded these measures to include a tighter notification regime as well as mandatory invitation of observers and on-site inspections without the right to refuse. This was then expanded further in the **Vienna Document**, adopted first in 1990 and subsequently updated several times (the latest update in 2011), which further strengthened confidence building and risk reduction measures. The Vienna Document is part of an interlocking web of mutually reinforcing agreements, which included the **1990 Conventional Forces in Europe Treaty (CFE)** with its own set of data exchange, notification, and inspection rules.

The European CBM system also included the **Open Skies Treaty (OST)**, signed in 1992 and entered into force in 2002. Initially proposed by US President Dwight Eisenhower, the OST was then considered as aerial verification for the Helsinki Final Act/Stockholm Document/Vienna Document and the CFE Treaty, but was too complicated and thus negotiated separately. In the end, the OST permitted 34 state-parties to conduct short-notice reconnaissance flights over the others' entire territories to collect data on military forces and activities. Overflights were distributed in accordance with special rules to ensure even and non-discriminatory coverage of the entire application area. OST was focused on military equipment limited by the CFE Treaty. These overflights began well before the entry into force of OST, as several hundred such overflights were conducted helping the ratification process. In addition, while the OST was not a direct verification tool for the 1991 START Treaty, it reinforced the treaty's goals by providing a broader transparency framework in which START verification could take place. In 2019, a conference of state parties certified the use of new-generation digital equipment for OST aircraft enhancing the quality of data collected during the flights (but without expanding the categories of data allowed for collection).

Conclusions

The web of risk reduction and confidence building regimes created during the Cold War and subsequent years did not survive long:

- The 1999 update of the CFE Treaty, which transformed it from bloc-based (NATO and Warsaw Pact) to national limits, never entered into force. In 2007, Russia suspended implementation of the original CFE and, in 2024, withdrew from it.
- The Vienna document has not been updated since 2011.¹⁰ Worse, Russia has on many occasions circumvented its provisions.

⁹ It is also worth mentioning the Mutual and Balanced Force Reduction (MBFR) talks, which themselves were an essential risk reduction tool from 1973-1989.

¹⁰ NATO put forward a comprehensive package of updates in 2016, agreed by NATO plus partners, but was rejected out of hand by Russia and Belarus.

- The United States withdrew from the Open Skies Treaty in 2020 over charges of Russian violations. Russia rejected these accusations and in 2021 withdrew as well. Although the Treaty formally remains in force, it has largely lost its purpose in the absence of two key parties.

Policy-Relevant Lessons from Past Risk Reduction Measures

An overview of past risk reduction measures allows formulating three policy-relevant lessons:

1. Productive efforts in the risk reduction area are more likely in a relatively stable status quo environment, when neither side seeks to radically change the international order through direct conflict or conflict in areas the other considers in its vital interest and, moreover, the other side knows and believes that. The notion of “relatively stable” does not exclude general conditions of conflict, including containment and/or deterrence policy. It only presupposes the absence of real or perceived plans to enter a large-scale military conflict. Accordingly, in a tumultuous, transitional period, such as the one we live in today, the likelihood of serious efforts aimed at risk reduction appears lower, although not impossible.
2. Risk reduction measures are more likely in the sub-area of nuclear conflict, weapons, postures, and related activities, especially when all parties concerned fear and seek to avoid large-scale nuclear war. Second on the list of priorities are risk reduction measures that address direct conventional conflict: these are primarily pursued out of fear that such conflict may escalate to the nuclear level.
3. Risk reduction and confidence building measures are relatively easier to negotiate than arms control agreements because, unlike the latter, they do not entail changes in military postures, research and development, or acquisition and require only minimal changes in standard operating procedures of the militaries. Indeed, the initial US-Soviet risk reduction measures took less time to negotiate and were completed earlier than the first arms control agreement (SALT I). Key negotiations on the 1986 Stockholm Document on confidence building in Europe took place during the time of greatest tension in the late Cold War period. It is possible that the 1983 Able Archer crisis helped bring home the need to strengthen the confidence building regime in Europe.

These lessons lead to the following propositions that could inform practical work in this issue area in the coming years:

1. Key actors on the international scene, including nuclear weapon states, continue to have shared interest in avoidance of nuclear war, including as a result of accident, misperception, miscommunication, or miscalculation or unintended escalation of a more limited conventional conflict. The “nuclear taboo” against the use of nuclear weapons, which gradually emerged during the Cold War, also remains in force (at least there are no indications that it is not). Some experts contend that the taboo is now stronger than ever. Others point to the taboo’s degradation with trends such as the potential return of more “usable” tactical systems, nuclear testing, and more.
2. The political will needed for practical action on the shared interest to avoid nuclear war is not guaranteed, nor is universal among nuclear weapon states, at least temporarily, for a variety of reasons. The problematic states are, unsurprisingly, Russia and China. The main reason for the lack of political will is the instability of the international system: the United States as well as its friends and allies are challenged by China and Russia. Both Beijing and Moscow (the latter probably more than the former) IIII

rely on nuclear weapons to balance the overwhelming military and economic superiority of the West. Moreover, in the context of its war against Ukraine, Russia has sought to leverage nuclear threats to limit Western involvement. Risk reduction measures, especially those that go beyond the elementary ones (such as notifications about launches of strategic ballistic missiles), could reduce or eliminate options for nuclear blackmail.

3. If and when the geopolitical situation stabilizes, at least partially, obstacles to discussion of risk reduction measures may weaken, but the Russian and the Chinese propensity to engage on risk reduction measures will likely differ. While both have a multi-decade record of active engagement in risk reduction (hotlines, notification agreements, etc.), although the Russian experience is longer and more varied, the decision for engagement in a results-oriented process might be more difficult to obtain and sustain from Beijing than from Moscow. While Russia would return to a traditional pattern of previous cooperation, China would be pivoting in a completely new direction on the topic.

4. Once necessary political decisions are made, work on practical risk reduction measures may have to start slowly, beginning with more elementary and less controversial measures. It may be advisable to contemplate two specific tasks as this work begins:

a) While multilateralization of Cold-War risk reduction measures may appear least controversial, it may be prudent to broaden the range to discuss measures preventing a limited conventional conflict between the P-5, such as, for example, rules governing behavior in areas of greatest tension (limits on military activities, notifications about naval patrols, etc.). This might help better address immediate concerns of all parties – not just Russia and China, but also the United States and its allies.

b) While the P-5 Process is an important venue for discussing differing perceptions of the drivers of nuclear risks, increasing transparency on nuclear doctrines, and more, it is not a negotiating forum. Nevertheless, P-5 Process meetings on risk reduction are helpful in keeping dialogue alive and creating lasting working relations between relevant officials from all capitals. Expectations on what they can tangibly achieve in that format should be managed and kept low.

c) Overall, nuclear-armed states should consider repeating the experience of the early 1970s: a combination of practical risk reduction measures, such as notifications, with agreements on principles of relations between nuclear weapons states. Considering similarities between the early 1970s Soviet position and the present-day Russian and Chinese positions, this approach could help move work on practical measures forward the same way as it did five decades ago. Language in politically binding documents could be made sufficiently general to avoid serious disagreements between parties, as was done in the past.

Part Two: Challenges to Risk Reduction in the Current Environment

The complex and reasonably comprehensive system of risk reduction measures created during the Cold War is in deep crisis. Regimes between nuclear weapon states mostly remain in force but can no longer be considered sufficient. Risk reduction and CSBM regimes in Europe have deteriorated at an unprecedentedly fast pace and today are almost non-existent. Worse, had they been restored by some miracle, they would have been as insufficient as those among nuclear weapons states.

There are several reasons for that unfortunate development beyond the broad geopolitical crisis.

Scenarios of Conflict Have Changed and Multiplied

With the end of the Cold War and the bipolar world, the risk of large-scale nuclear war and surprise nuclear attack have all but disappeared. Even when political disagreements and eventually conflict between the United States (the West in general), on the one hand, and Russia and China, on the other, began to grow and military power once again entered the political scene, the shape of nuclear threats looked very different from the time of the Cold War. The chief Russian concern has been about the overwhelming technological and numerical superiority of the United States and its allies in long-range precision-guided conventional strike assets as well as missile defense. Conflict, at least in Russian eyes, could begin as limited conventional and only then escalate to the nuclear level. Accordingly, Russia began to contemplate limited use of nuclear weapons as the key deterrence tool vis-à-vis this perceived threat. Global nuclear war featuring large-scale use of strategic weapons, in contrast, has been considered low probability whereas the emphasis is made on credible threat of limited use of theater-range and perhaps also tactical nuclear weapons.

In the present threat environment, notifications about launches of strategic ballistic missiles, which were intended to avoid misperception about the beginning of a large-scale nuclear war, have become, in a way, marginal to the likely escalation scenarios. At the same time, long-range cruise missiles, which became the main warfighting tool in the early 1990s, are not subject to notifications – neither single launches nor simultaneous launches of multiple cruise missiles. They have also remained outside the purview of the multilateral HCoC.

The same is true for the risk reduction and CSBM measures in Europe. In the past, the main scenario for conflict was large-scale attack using large masses of what can now be classified as “traditional” conventional forces, such as tanks, armored personnel carriers, artillery, tactical aircraft, etc. Accordingly, risk reduction and CSBM measures focused on reducing the concentration of significant groups of forces in the center of Europe and notifications, on-site inspections, and other measures to prevent concentration of forces under the guise of exercises; the CFE Treaty mandated permanent low limits on troops in the vicinity of the line of contact (LoC).

In the present day, the risk landscape has changed. We have seen considerable concentration of forces on the border of Ukraine in the run-up to full-scale invasion in February 2022 (concentration that should have been prevented by the Adapted CFE had it entered into force), but the likelihood of a similar scenario in the NATO-Russia context appears low. Of greater concern are limited confrontations between one or more NATO countries and Russia, which may quickly escalate into a full-scale conventional conflict with potential for further escalation beyond the nuclear threshold. Such confrontations may take place in the air, at sea, or, less likely, on land. They are not addressed by any

past regimes, whether those in force (at least formally) or those that have passed with partial exception of INCSEA. This risk is not limited to Europe, of course, – one cannot rule out similar scenarios in Asia-Pacific in the foreseeable future.

This also means that, in contrast to the Cold War, when any conflict was bound to be led by superpowers, today's conflicts potentially fraught with the threat of nuclear use may start outside control of nuclear weapon states, which may – and likely will – become involved only at a later stage making the task of controlling escalation more difficult. This points at the need, first of all, to maintain strong discipline in alliance relationships to make sure that any confrontation, no matter how small, does not catch the P-5 by surprise and that risk reduction tools as well as communication channels are utilized as early as possible.

The same applies to an even greater extent to conflicts outside alliance relationships – the number of conflicts in the world is large and growing as does the risk that P-5 states may become embroiled transforming a local conflict into direct confrontation between nuclear powers. Accordingly, there should exist a shared understanding that P-5 need to maintain communication with respect to any risky situations, ensure clarity of intentions and tools, and avoid direct confrontation.

New Tools of War

The emergence of long-range strike capability, which for more than two decades favored the United States and its allies, significantly reduced the relevance of Cold War risk reduction measures. Russian military analysts even came up with the concept of the “6th Generation Warfare,” which foresaw a new type of contactless war, which made concentration of forces at the front line irrelevant. Russia's war against Ukraine has somewhat modified that perception: it demonstrated that the utility of long-range precision strike weapons against a peer adversary with modern air and missile defense systems is limited. That war, however, also demonstrated high utility of other modern capabilities, such as unmanned aerial vehicles (UAVs), which can provide previously unattainable level of situational awareness and greatly enhance kill capability vis-à-vis heavy equipment. This made traditional methods of warfighting with their emphasis on large groups of armor virtually impossible – more than two years of war have been waged with small groups of infantry, low concentration of ground-based fires, and other similar features. As a result, old risk reduction measures demonstrated significant deficiencies.

Further, traditional risk reduction and CSBM measures in Europe concentrated solely on land forces leaving naval and to a significant extent air assets on the sidelines. All conflicts starting with the First War in the Gulf in 1991 demonstrated, however, the primary role of sea platforms for long-range cruise missiles; the family of missiles (primarily of the cruise variety) with the range above 300 km has been growing in all advanced countries, as well. Leaving these assets outside risk reduction regimes can no longer be considered tenable.

Finally, a significantly complicating factor is proliferation of dual capable missiles of all types and classes in Russia and China, in a reversal of the Cold War pattern and in contrast to the United States phasing out of dual capability from non-strategic missiles after the end of the Cold War. The current US policy might change in the near future: it is only logical that the United States will adopt a symmetric response to the overwhelming trends in the Russian and Chinese postures to enhance the credibility of its extended deterrence.

Cold War approaches to risk reduction and confidence building measures were based on an implicit assumption that long-range missiles were equipped with nuclear warheads. This assumption de facto created two only marginally overlapping domains for risk reduction and CSBM: one among nuclear weapons states (the United States and the Soviet Union in particular) that addressed the threat of nuclear war and the other between NATO and the Warsaw Pact concentrating on prevention of large-scale primarily conventional war in the center of Europe. Proliferation of dual-capable weapons, when the attacked party will not know the nature of incoming missiles, makes the old approach less applicable and warrants development of new, perhaps more complex and comprehensive measures to address the new threat environment.

Changes in the Geopolitical Environment

The Cold War saw the gradual emergence of stable institutions to address security challenges: the rarely interrupted negotiations between the United States and the Soviet Union (even when negotiations were stalled, delegations continued to meet and in the process developed better understanding of positions and concerns of the other side), nearly permanent process of consultations and negotiations on conventional forces in Europe, continuing negotiations on CSBMs in Europe (subject to agreed timetable, so that even when none were held parties knew when the process would be resumed), and other venues of bilateral and multilateral interaction. Further, all parties – and especially the United States and the Soviet Union – developed a stable pattern of behavior with respects to uncertainties, suspicions, and concerns inevitably emerging in the process of implementation of various formal and informal agreements. Similarly, a stable pattern of addressing differences was practiced at various international organizations.

Today, the picture is vastly different. The normal process of interaction for sustainment of regimes has been broken. Mechanisms created to support implementation of regimes (including the resolution of questions, disagreements, and suspicions) no longer function properly; parties exchange accusations (mostly in public, which only makes chances for a successful resolution worse), refuse to provide additional information, or engage in a serious dialogue to resolve their differences. The same pattern applies well beyond CSBM and conventional arms control – for example, it plagues the Organization for the Prohibition of Chemical Weapons (OPCW). As a result, restoration of productive dialogue will be difficult because the already well established destructive and confrontational pattern will be hard to break, including for domestic political reasons.

While on the surface it would appear that development of risk reduction regimes was caused solely or at least primarily by the fear of large-scale nuclear war, they reflected a deeper process, which was taking place in the 1960s and 1970s: the completion of the bipolar system built around the shared understanding that this structure could not be changed by military power. In effect, the Cold War generation of these measures reflected the acceptance of not only the military, but also the geopolitical status quo.

During the Cold War, the world was stably bipolar – East and West – with a high level of discipline inside each of them while non-aligned countries were discouraged and often refrained from foreign policy activism, which could upset the stability of the international system.

Today, the situation is fundamentally different. The international system is in flux. The emergence of new actors – first and foremost China – and the challenge to the post-Cold War primacy of the United

States, its friends and allies have created a systemic conflict, which impedes agreement on risk reduction measures. While Iran and North Korea could also trigger a serious crisis, the list of highly relevant actors is not limited to them: there are other heavyweights, such as India, and highly influential countries, such as Saudi Arabia or Brazil.

Alliance relationships have also become looser. Russia's only ally, Belarus, can exercise a significant degree of freedom in its actions. For example, in May 2024 it literally forced Moscow to hold exercises for tactical nuclear weapons delivery systems in its territory (initially exercises were only planned for the Southern Military District). Even members of NATO and the European Union may choose to pursue their own policies without consulting others. In 2023, Estonia declared its intention to extend the zone of control over the Baltic Sea to international waters – a step that could be justified under the Law of the Sea convention but could result in a direct conflict between this NATO/EU country with Russia. It did not act on that intention, but the fact is that consultations were held after the public statements rather than before them. There are other examples of similar behavior. Without doubt, the more chaotic nature of the international system makes the risk reduction enterprise more challenging.

Geographical Extension of Risk Areas

Enlargement of NATO to the Baltic states and, more recently, to Finland and Sweden has radically extended the line of contact, which during the Cold War was limited to one relatively narrow central front significantly simplifying prevention of war, confidence building, and arms control. Accordingly, the range of scenarios, which could trigger escalation has also grown as has the number of actors involved in a possible NATO-Russia confrontation.

Tensions have been also growing in the Asia-Pacific between China, on the one hand, and a group of countries supported and led by the United States (Japan, South Korea, Australia, the Philippines, etc.). The number of incidents at sea in the region far exceeds what has been observed in the European region (the Baltic and the Black Seas, even considering the latter is the scene of war between Russia and Ukraine). Consequently, the risk of direct confrontation of regional countries and actors, which may lead to the involvement of nuclear powers and trigger dangerous escalation, also appears very high. It is well known that two nuclear weapon states in direct conflict, India and Pakistan, have engaged in aerial dogfights and other incidents, and India and China have actually killed each other's troops in the glacier region. Very few risk reduction measures have been implemented in that region.

Challenges with Employment of Communication Links

Communication links developed during the Cold War and afterwards appear reasonably adequate for resolving concerns, suspicions, or possible misinterpretations and misunderstandings, which could result in escalation, potentially leading to nuclear use. This is especially true for the United States and Russia, which created a robust capability to communicate during the Cold War, and less true for the United States and China, which have established two hotlines, but these are not as efficient at the US-Russian links. The effectiveness of communication links, however, depends on the willingness of the parties to use them. It is well known that for several first months of the Russian aggression against Ukraine Russia refused to answer repeated calls from the US Department of Defense to converse with their military counterparts in Moscow. The United States did not use the National Nuclear Risk Reduction Center, but there can be little doubt that the result would have been the same. The same is true for the US-China interaction: the latter did not respond to US attempts to connect for an extended

period of time (in part probably because the then-Minister of Defense of China was under US sanctions).

A new challenge is the need to ensure the authenticity of communication. Rapid progress in AI tools and the associated risk that source of communication may be spoofed may call into question the authenticity of communication, especially when discussion of highly sensitive developments and exchange of information that is classified and/or is intended to remain private between parties.

Challenges Specific to China

In contrast to the United States and Russia, China has a very limited record of engagement on risk reduction measures. These are limited to several hotlines established after the Cold War and missile launch notifications with Russia. It is also not a party to HCoC and thus does not provide notifications to the international community. China states that as a “weaker nuclear power” it does not need to participate in such measures. In this, its position may seem similar to that of the United Kingdom and France, but unlike those, China has an increasingly tense relationship with the United States and does not participate in tangible confidence building and risk reduction measures in Asia-Pacific (in contrast to the United Kingdom and France, which have been part of Europe-wide regimes). It has also begun what appears to be a crash build up of its nuclear forces, potentially bringing it closer to those of the United States and Russia.

The need for such measures is growing as tension between China, on the one hand, and the United States and its allies and friends (especially Taiwan and the Philippines) as well as territorial disputes have been rapidly increasing in the last several years. Coupled with the buildup of Chinese strategic forces, the situation begins to resemble tensions in Europe in the first two decades of the Cold War, although (so far) without major crises bordering on open military confrontation.

Both the United States and China share opinions on the main areas of conflict – Taiwan, the Philippines, the Korean Peninsula – but sharply disagree on the need to develop and implement risk reduction measures. China believes that such “guardrails” can only facilitate “aggressive” policies by the United States and has previously referred to them as “conflict enablers.” Instead of risk reduction, China prefers to talk about conflict prevention – changing provocative policies that rely on military power (predictably, this only applies to the United States), which, in its most extreme form, foresees US withdrawal from Asia, at least in the security domain. According to Chinese views, a fundamental change of US policy should eliminate the “root cause” of conflicts. Obviously, China does not see any need to change or modify its own policy, other than perhaps learn more about how to deal with crises by reviewing historical cases.

For the prevention of nuclear war, China insists that an obligation not to use nuclear weapons first would be a major step forward. From a US perspective, however, the problem is that such a policy is neither verifiable nor, for that matter, reliable because in a crisis situation nothing could prevent a state from using nuclear weapons if they have them. Consequently, whether the United States adopts such a policy or not, this will hardly ease the tension.

In this, one can detect certain similarities between the Chinese approach to risk reduction and the old (early 1970s) Soviet approach: the latter believed in agreeing on the rules of conduct between superpowers that would help avoid conflict by establishing certain limits and principles of foreign and IIII

international policy. Such rules were agreed but failed to prevent conflicts in the periphery which ultimately played a major role in bringing the US-Soviet détente to the end (such as conflicts in the African Horn or Angola).

Further, there are few confidence building and risk reduction measures in place governing naval activities in the region. China is not party to the Incidents at Sea Agreement (INCSEA), although the 1998 US-China Military Maritime Consultative Agreement contains many provisions borrowed from the INCSEA. The relative weakness of these appears particularly troubling as incidents at sea are rapidly multiplying – not so much between the United States and China as between China and other countries, particularly the Philippines. There are also no rules pertaining to air operations, although this issue-area has so far been relatively less troublesome. In addition, there are no rules pertaining to the deployment or launches of conventional or dual-capable non-strategic missiles. Instead, China wants the United States and its allies to refrain from missile deployment and to abandon missile defense capabilities.

An even bigger challenge is that Beijing apparently believes in its ability to control crisis or conflict escalation – at least prevent it from approaching the nuclear threshold. Its behavior seems to suggest that it treats limited escalation vis-à-vis its neighbors and, by implication, the United States and its allies as a reasonably safe mode of operation while responsibility for crisis avoidance is shifted to other parties.

China, at least so far, has found it difficult to embrace the idea of a combination of deterrence and arms control/risk reduction or compartmentalization of competition and cooperation pursued at the same time. This difficult situation is further exacerbated by quickly worsening economic relations as the United States and, to a smaller extent, its allies levy increasingly tough sanctions or tariffs on the more advanced sectors of the Chinese industry, on which Beijing pins greatest hopes for economic development. There are reasons to believe that Chinese leadership views the rapidly developing conflict as all-encompassing, but instead of seeking to regulate it to make it safer, it regards such measures as unilaterally favoring the adversary.

Underlying these processes is the dynamically shifting situation in the region and, more broadly, at the global level evolving in a yet unknown direction and toward an unknown end. As noted above, risk reduction and even more so arms control are more likely in a relatively stable, status quo environment. Since the parameters of competition remain fluid, substantive dialogue on practical measures may be difficult to launch. This challenge is further exacerbated by the deep conflict between the West and Russia, which so far rules out the chance of Moscow educating Beijing about the value of risk reduction; to the contrary, Moscow is more interested in deepening the conflict between China and the West and has moved closer to the Chinese views on ways to prevent conflict.

Part Three: A Risk Reduction System for the Present and Emerging Security Environment

Historically, risk reduction efforts concentrated on communication and on transparency of military activities/capabilities. These two areas have logically complemented each other:

- Communication channels are intended to prevent military conflict resulting from an accident, miscalculation, misperception, or miscommunication. At least, this was the logic behind the early hotlines at the time when any military conflict between nuclear weapons states (the United States and the Soviet Union first and foremost) was expected to be nuclear at the outset or very quickly escalate to above the nuclear threshold. Lines of communication have multiplied beyond the original bilateral US-Soviet/Russian format, and it may be now possible to think about using them to prevent military conflicts from starting in the first place by addressing uncertainties and suspicions about activities of the other side before reacting to the perceived dangerous activities. In other words, the use of the mode of communication, which emerged after the Cuban Missile Crisis as the last resort measure to manage an ongoing conflict, could be expanded to include the function of risk reduction.
- Notifications and other transparency measures help ensure that each party to the risk reduction regime(s) possesses sufficient knowledge about military activities of the potential adversary – activities that may be interpreted as preparation for or beginning of surprise attack, such as missile launches or increased alert status of deployed adversary forces. Transparency cannot fully resolve concerns because they do not affect military postures and thus theoretical capability for surprise attack is not removed, but better understanding of the immediate security environment can help ease tensions, reduce propensity for worse-case planning, and help avoid trigger-happy postures. By facilitating minimization of countermeasures (parties do not feel the need to undertake preemptive steps out of concern about activities of the other), transparency and notifications, in effect, indirectly contain arms racing dynamics.

Together, communication and transparency create the foundation for a regime of risk reduction. While these measures cannot (and are not intended to) resolve conflicts between great powers, they can help create conditions under which political conflict, even one so comprehensive as the Cold War, is less likely to cross the threshold of war, including limited military confrontation, which carries with it risk of escalation to the nuclear level. Indeed, key conflicts today, such as between the United States, NATO, and their friends and allies, including in the Pacific, on the one hand, and Russia and China on the other, are all-encompassing: they include the political, economic, and humanitarian dimensions as well as the military component – conventional and increasingly nuclear deterrence in different stages of maturity (more developed in Europe, the region with tradition of military stand-off since the Cold War, and rapidly developing in Asia). All parties deploy or plan to enhance warfighting capabilities and prepare for provocations or attacks by the adversary. In this situation, advanced knowledge about activities that could trigger unintentional escalation and the ability to quickly clarify intentions and status of the adversary's forces can help avoid war, making the broader political conflict somewhat safer.

While the main objectives and structure of risk reduction and management regimes are bound to remain similar, their contents need to be updated to address the challenges that have emerged after the end of the Cold War. The shortcomings of legacy regimes, described above, center around the

emergence of new warfighting capabilities, which multiply possible conflict and escalation paths; accordingly, a new generation of measures is needed to address new contingencies. Updated set of measures will be needed for both tracks, communication and transparency/notifications.

The following developments appear particularly dangerous, considering both the theoretical warfighting capability and the experience of multiple military conflicts since the end of the Cold War, especially Russia's war against Ukraine:

- **Conventional warfighting capability:**

- Long-range conventional strike assets, which can reach targets deep in the potential adversary's territory or attack its forces deployed outside national territory. Such strikes can degrade the adversary's capability to fight conventional war and result in an escalation to the nuclear level if it fears significant defeat in a conventional conflict.
- Highly developed and rapidly improving surveillance capability, including but not limited to space, can provide targeting for strike assets and, perhaps more importantly, make both the battlefield and the rear highly transparent. A country with superior surveillance capability has a major military advantage over its adversaries regardless of the status of its armed forces and long-range strike weapons, which may create an incentive for the other side to attack space- and air-based surveillance assets.
- Many long-range precision-guided weapons are deployed at sea and on a variety of aircraft. Air- and sea-launched theater-range weapons have never been limited by any international regime (except very weak limitations on basing US strategic bombers outside national territory) and thus can significantly increase the relevant capability in new theaters in limited time and often clandestinely. The Russian and the Chinese sea-based theater-range assets may be of special concern because they are being deployed on a large variety of small platforms (including diesel submarines). The United States also now plans to increase the variety of surface platforms carrying long-range cruise missiles. The challenge applies to both the Pacific and European (the Baltic Sea and the Arctic) theaters.
- Unmanned aerial vehicles (UAVs) can have effects similar to those of long-range precision-guided conventional strike weapons, in particular when used against civilian (unfortified) infrastructure, while other types of UAVs can support enhanced surveillance activities amplifying data acquired from other sources, including real-time data, and facilitate both situational awareness and guidance. Strike versions of UAVs, especially when employed in large numbers, can be used to saturate air and missile defense systems as demonstrated both in the course of Russia's war against Ukraine and by the Iranian strike against Israel in April 2024. One can already see the potentially destabilizing role of surveillance UAVs in the context of the war in Ukraine: Moscow believes that regular flights of American UAVs over the Black Sea along Russian airspace are used for targeting and guidance of Ukrainian strike assets and thus represent tangible evidence that the United States directly participates in that war; the Ukrainian strike at the Armavir early warning radar in the spring of 2024 created a particularly dangerous situation.

- **Nuclear warfighting capability has not changed as radically since the Cold War, but there have been several important developments, too:**
 - Russia and China emphasize dual-capable missiles, which can carry both nuclear and conventional warheads. While this option allows significant savings at all stages of the weapons' life cycle, including research and development, production, and deployment, as well as training of personnel, it also creates a major uncertainty: the United States, its allies and partners cannot know with sufficient level of confidence, in case of military conflict, which warheads Russian and/or Chinese missiles carry. This trend cannot be changed in the near future; in fact, the United States may develop similar capability in response. The presence of dual-capable missiles noticeably increases the risk of any military conflict crossing the nuclear threshold.
 - Seeking to obtain a defense penetration capability, Russia has developed several hypersonic systems with reduced flight-time (e.g., Tsirkon missile) for both theater- and strategic-level missions. China is moving in the same direction. The main risk associated with such systems is shorter time left for decision-makers to assess the situation—using data from early warning systems, verifying it as necessary, and establishing contact with the adversary to clarify the situation (using the hotline, for example) means there simply may not be enough time to do anything except launch a strike on warning. In the 1980s, the Soviet Union, in response to the deployment of US theater-range missiles Pershing II with 7-10 minutes flight time from Western Germany to its territory, ultimately chose arms control as a way to resolve the dangerous situation. The USSR made major concessions to achieve the removal of Pershing IIs, but at the same time also vastly improved its command-and-control system enabling it to launch nuclear weapons even in the face of a theoretical US capability for a successful decapitation strike (not the “dead hand” with automated launch, but close). Recently, Russia has made new improvements to its command-and-control system. It is not known how Russia's and China's fast strike capability may affect relevant US protocols.
- **Introduction of elements of artificial intelligence into decision-making systems in the foreseeable future may also increase risks of unintended escalation.** While AI is capable of providing decision-makers with more comprehensive situational awareness, it could also amplify concerns about impending attack and trigger a tougher response than required by the situation.
- **Rapid development of missile defense in the recent decades carries several risks as well:**
 - Missile defense may significantly limit the adversary's ability to respond in kind, whether at the theater or the strategic level. Concern that the adversary might intercept a weakened response force's second strike favors strike-on-warning or launch-under-attack, which is always the second-best option to second strike, especially in the time of crisis as it may come in response to false (unconfirmed) warning. This particularly affects theater-level conflict (missile defense systems capable of intercepting strategic missiles are few and not yet sufficiently reliable).
 - As recent combat has demonstrated, penetration of tactical- and theater-level missile defense requires large numbers of missiles and UAVs. Accordingly, parties will be inclined to deploy large numbers of these assets and ramp-up production to create large stockpiles of these systems (Russia has displayed this pattern in 2022-24). This capability is likely to cause concern of other parties and stimulate arms race in both offensive and defensive domains.

- Finally, both Russia and Ukraine have used missile interceptors in the strike role, meaning that defense assets can be used for offensive purposes. This experience will certainly be incorporated by other countries into their planning and assessment of the security environment.

The broad variety of military assets, which may present – or be seen to present – risk of conflict and, accordingly, a broad variety of contingencies capable of triggering conflict, requires a new approach to both communication and risk reduction. Continuation of Cold War-era patterns of communication between great powers and legacy transparency and confidence building measures will not suffice in the new environment. They have to be qualitatively developed to address new risks.

In turn, the two main directions proposed in this study are:

- **Transformation of the existing bilateral communication links, which serve the purpose of preventing and managing conflict, into a multilateral risk reduction network.**
- **Addition of new weapons systems and activities to the existing system of notifications and possibly expansion of transparency and confidence building measures into new areas.**

Communication Links: A Risk Reduction Network

So far, existing communication links fall into two categories. First, government-to-government (including military-to-military) hotlines and other, technologically similar, agreed channels that could be used either in a crisis situation or for routine conversations (a good example are calls between US Secretary of Defense and the new Russian Minister of Defense in the summer of 2024). Second, dedicated channels used to provide notifications required by various arms control and confidence building regimes. The best known and the best developed channel in the second category are the National and Nuclear Risk Reduction Centers, NNRRCs, between the United States and Russia. There are also networks, such as those maintained by the OSCE and HCoC, where notifications are provided through regular diplomatic channels to a “central bank”, which is accessible to all parties (these two categories of communication channels are linked to the extent that the US NNRRC sends also relevant notifications to the OSCE network and, though it, can reach several dozen countries). In some cases, notifications are sent through regular diplomatic channels (for example, missile launch notifications between Russia and China).

Existing communication links remain valuable but are not sufficient for the existing and foreseeable security environment. The political and military requirements for conflict prevention and management presume the ability of parties to quickly request clarification about ongoing developments (increased alert level, unexpected movement of forces, etc.) and, equally important, receive an answer in equally short time. Diplomatic channels or even hotlines, which usually link heads of state, cannot guarantee it either.

First and foremost, such channels should be multilateral connecting key players on the international scene. The P-5 (the United States, Russia, China, United Kingdom, and France) are the obvious first-order candidates, but the number of nodes can (perhaps should) be expanded (more about the desired nodes below).

The main purpose of the proposed network will be risk reduction as opposed to risk management or conflict escalation management. Put differently, the emphasis should be on avoiding a situation when political conflict has a chance to graduate to military confrontation. That process could be modeled as a three-stage escalation: an action-reaction cycle (for example, deployment – counter-deployment – counter-counter-deployment), threatening actions (exercises, flights of aircraft and/or ship patrols next to the other side’s airspace and/or territorial waters, increased alert status, etc.), and, finally, direct confrontation of adversary forces, even if very limited and low-key ones.

Today and in the future, taking action when escalation has already begun (conflict prevention), much less when direct military confrontation has already started (conflict management), may be too late. Emphasis should rather be made on activities taken before the process of escalation begins. This requirement for risk reduction is dictated by the new security environment. Today, risks are multiple and varied: first and foremost, they are associated with suspicions about intentions of other parties operationalized in military posture and planned deployment of assets that could be used for surprise attack; research and development programs, which could result in new capabilities, which potential adversaries may consider dangerously upsetting the balance of power globally or at the regional (theater) level; activities, such as exercises, test launches, surveillance or demonstration flights or ship patrols, which may be seen as collection of real-time data about potential targets or which could trigger excessive reaction, and more.

The growing political tension unavoidably breeds suspicion, and efforts one party sees as aimed at strengthening deterrence and stability may be seen (in fact, given the lack of trust and overwhelming suspicion, will almost certainly be seen) by adversaries as provocative and intended to upset stability. It truly does not matter that in all likelihood none of these actions – research and development programs, deployment, exercises, signals, etc. – are intended as a provocation and that the party that undertakes them views them as strictly defensive and minimal. It is almost certain that another party or several parties will view them as threatening and aggressive.

The result will be arms racing (both development of new weapons and deployment of additional forces), signals intended to communicate resolve to defend interests and allies, which will likely be regarded as provocative, and high likelihood of a spiral of signals with high probability of direct conflict. In an environment dominated by suspicion and propensity for conflictual behavior, neither party will want to step back even in a small, insignificant confrontation, thus starting an escalation potentially resulting in a large-scale conflict and ultimately getting close to the nuclear threshold.

Under these conditions, one important way to reduce suspicions and the likelihood of direct confrontation is better communication between potential adversaries, which could help clarify intentions and the scale of actions the other side may consider provocative. There is no guarantee such clarifications will improve political relations – in fact, this is not likely, at least in the near future. But they can reduce the probability of conflict as a result of misunderstanding, misperception, miscalculation, or, frankly, simple stubbornness, when each party insists it is doing the right thing that it is the other that needs to step back.

A risk reduction network needs to have the following features:

1. Flexibility of types of messages and requests for information: Given the broad variety of scenarios, which could lead to direct military confrontation and the variety of escalation scenarios, it

may be impractical – perhaps impossible – to clearly define all types of messages that could be sent over the network, including first and foremost requests for clarification and data. Instead, it is desirable to agree on the right of all parties to raise any issues – send warnings (advisories) about any kind of planned activity or request clarification about any kind of activity.

The precedent for undefined types of communication is provided by the 1987 US-Soviet agreement on the establishment of Nuclear Risk Reduction Centers. While Article 2 of that agreement posits that parties will only “transmit notifications identified in Protocol I,” emphasizing notifications pursuant to various treaties and agreements, Article 3 of Protocol I adds that “each Party also may, at its own discretion as a display of good will and with a view to building confidence, transmit through the Nuclear Risk Reduction Centers communications other than those provided for under Article 1 of this Protocol.” Effectively, the 1987 agreement gives parties broad rights to transmit any communication they see necessary. Such cases have been rare, but nonetheless NNRRCs have been used for communication outside their formal purview (one example is communication sent by the United States during the events of 11 September 2001, to clarify measures taken by the United States to Moscow). This exception can and should be made the rule.

2. Culture of risk reduction communication: Agreeing on such an unprecedented degree of flexibility of communication will not be easy: it goes against the long tradition of strictly defining the range of allowable notifications and requests in past international agreements. Implementing such a novel agreement may be even more challenging, especially at the initial stage.

Parties will need to develop the culture of risk reduction communication – of sending requests and, more importantly, responding to them in a manner intended to and capable of alleviating concerns of the requestor. The culture of risk reduction notification should also include understanding the limits of requests. Some, especially at first, may be excessive and demand excessively detailed information or unjustified concessions from the other party. Such requests, if they happen too often, may undermine the entire enterprise.

Similarly, a culture of risk reduction includes volunteering information. The critical condition for success here is acceptance by all parties to the network of the fact that the activities they consider benign may not be viewed as such by other parties.

The foundation of the risk reduction culture is shared belief that adversaries are interested in preventing war and minimizing the risk of conflict – the same belief that served as foundation for arms control and confidence building in the early 1970s. This is a very limited level of trust, but it represents the minimal condition for cooperation. The challenges of building the culture of risk reduction and cooperation toward that end should not be underestimated: today, the attitude of all relevant parties is informed by righteousness, belief that their benign intentions are self-evident or require only a general statement, and low propensity for consultations to clarify suspicions and mutual accusations.

The building of risk reduction culture will have to proceed slowly and cautiously, step by step, while parties learn the benefits of the network and establish a stable pattern of cooperation, learn to respond to requests and volunteer information. How long this may take is anyone’s guess, but the world was in a similar state of affairs during the first half of the Cold War and yet came to understand, in the 1970s, that cooperation is necessary; there is no reason why this cannot happen again.

3. Connecting nodes critical for risk reduction mission: The system of bilateral communication links between the P-5 is not sufficient for the task of risk reduction: a large share of possible conflict and escalation scenarios affect more than dyads. It would be only prudent to connect at least all P-5: the system should allow contacting any and all of them. At the same time, it should be clearly understood that the P-5 do not control all developments in the world that may affect the security environment.

Of particular concern are actions by third countries, which may be undertaken without knowledge or endorsement of one of the P-5, but for which members of the P-5 “club” may be held responsible by other members. Such situations require instant clarification. One such example is a phone conversation between the Russian Minister of Defense Andrey Belousov and US Secretary of Defense Lloyd Austin on 12 July 2024: according to informed sources, the former called to inform the latter about a clandestine operation of Ukraine, which, the Russians believed, could result in a direct confrontation with the United States and had been approved by Washington.¹¹ Austin clarified, however, that the United States was unaware of these plans. The fact that Russia decided to check its suspicion before taking action is a good example for similar situations in the future.

For that reason, it may be advisable to contemplate adding to the P-5 at least one more node, the NATO Headquarters in Brussels, to facilitate rapid resolution of concerns in Europe. Perhaps US allies and partners in Asia (Japan and/or South Korea) may be considered as candidates for the risk reduction network as well. Such a modest expansion of the network could constitute the second stage of its development.

Also for the second or perhaps for the third stage of network development, it may be desirable to include at least two more nuclear-armed states, India and Pakistan. Although they have demonstrated they can successfully address critical situations bilaterally, it would nonetheless be beneficial to expand the network to all nuclear-armed states (North Korea and Israel, which does not admit nuclear status, will present a major challenge for a long time). Moreover, continuing tensions between India and China makes it desirable to have both on the same risk reduction network.

Any further expansion of the risk reduction network will depend on the needs and the political environment. There is no reason to make it all-encompassing – size may be the enemy of quality in this case.

4. Notifications and treaty implementation: Same as existing US-Russian Risk Reduction Centers, the multilateral risk reduction network can support implementation of existing and future arms control and confidence building agreements serving as a conduit for transmission of notifications they require. The network can also be used for notifications, which are currently sent through other channels: as noted above, there are reasons to believe that notifications about missile launches between Russia and China are transmitted through diplomatic channels; a more streamlined and technically more fitting channel should facilitate this activity.

5. From the technical perspective, risk reduction channels should satisfy the following conditions:

- 24-hour, 7 days a week connection.

¹¹ Eric Schmitt (2024), “A Mysterious Plot Prompts a Rare Call From Russia to the Pentagon”, *New York Times*.

- Reliability of communication links (redundancy, low vulnerability to interruption for technical reasons or by third parties, etc.), regular checks of the status of the communication channel(s). For example, the US-Russian NNRRCs verify every two hours that the connection is live.
- Reliability of communication networks (ensuring that a dedicated mesh network is in place in case the traditional networks the communication lines operate do not work or are knocked out due to conflict, including when already past the nuclear brink).
- Short time for establishment of connection and reasonably short time for receiving response to a request. Although the communication center is a primarily technical body, which may be staffed and located at the discretion of each member of the network (for example, in the United States the NNRRC is located in the State Department while in Russia in the Ministry of Defense), it is desirable to have an interagency group available on call to quickly handle issues raised through the network preferably on the 24/7 basis in case of emergency.
- Standardized communication protocols (the US-Russian NNRRCs can serve as an example), which should be the same for all parties that participate in the network. Each party should be able to connect to any and all as needed.
- Privacy of communication, protection against spoofing and access by unauthorized actors.

In a way, the proposed risk reduction network is similar to a well-developed diplomatic dialogue (such a dialogue is absent today, at least between the United States and Russia and only relatively better between the United States and China), which consists of almost uninterrupted exchange of messages, requests, clarifications, etc., with several important differences. First, diplomatic dialogue is too slow for the rapid pace of escalation characteristic for modern warfare. Second, diplomats are in most cases simple conduits who transmit requests to the capital, where the response is developed by an interagency group; this process takes much more time than direct communication.

The proposed risk reduction network is not intended to replace other existing communication links, such as hotlines between governments or other means. Rather, it should supplement these to ensure more routine and faster contacts optimized for exchanges on primarily technical issues, which are rarely addressed through political and diplomatic channels, such as movement of military assets (troops, ships, submarines, bombers, etc.). It would also help that this connection will be live 24/7 and will exclude a situation when a party refuses to receive a call or postpones a response – a situation, which is more likely with political channels even if only for technical reasons (the relevant official unavailable at the moment of the call) or when the other side simply refuses to take calls, as it has happened more than once in the last several years.

Expanded Notifications and Transparency Regime

A risk reduction communication network capable of quickly addressing concerns, can be usefully complemented with expanded notification and transparency measures, which build upon and further develop the set of measures established during and after the Cold War. Exchange of data/provision of notifications about some categories of weapons and activities can be regularized and not depend on ad hoc, case-by-case contacts through the risk reduction work. Regularization of this process should also help with the development of risk reduction culture outlined above.

The next stage of notifications and transparency measure could be informed by the following considerations:

- There is a tradition to provide notifications about launches of long-range strike weapons, but the old rules do not address the majority of such systems today. The range of weapons and activities, which may cause concern of one or more parties is very broad and an effort to provide for notification/transparency measures that would reliably address all of them is hardly practical. The volume of data, which may include tactical missiles, a variety of missile defense systems, UAVs, and so on, is simply too big and unwieldy – they measure in thousands. Over time, new systems are bound to emerge – all countries pursue active research and development programs. The challenge caused by proliferation of long-range strike systems is similar to the one the United States and the Soviet Union (as well as NATO and the Warsaw Pact) faced during Mutual and Balanced Force Reductions (MBFR) and Treaty on Conventional Armed Forces in Europe (CFE) Treaty negotiations – it simply did not make sense to address each of “small,” but numerous weapons, such as tanks, artillery, aircraft, and others, which were the main source of concern in the 1970s and 1980s, except when these featured in large numbers (large-scale exercises or deployments). After all, they represented a potential threat only in case of high concentration in a sensitive region (such as the line of contact between the two alliances) and their alert status changed; the same approach could be applied to modern weapons of concern.
- That said, long- (theater-) range conventional and dual-capable missiles, including those with hypersonic speed, which can be used for deep strikes against the adversaries’ armed forces and civilian infrastructure are the critical element of military capability. Without these, UAVs are much less capable and missile defense loses a significant part of its mission. Tactical missiles also play an important role, but their role is limited to the areas immediately adjacent to the line of contact and thus less impactful. Thus, it would be reasonable to concentrate the new generation of notifications and transparency measures on long- (theater)-range weapons.
- For the purposes of the notification/transparency regime (and, in the future, perhaps also arms control agreements), it may be advisable to revisit the definition of “long-range.” It is only logical and reasonable to lower the INF Treaty definition (range of 500 km or more) to 300 km. Several reasons for that revision are apparent:
 - The 500 km definition was custom-made for specific requirements of the INF Treaty – several types of ground-launched missiles;
 - The original range of intermediate-range missiles was 1000 km and was revised to address concerns that emerged in the course of negotiations at a relatively late stage;
 - The INF Treaty addressed only ground-launched missiles; the depth of their strikes is limited by deployment areas. In contrast, air- and sea-launched missiles, even those with shorter ranges, can strike at least at the same depth of the adversary territory because their platforms (aircraft, ships, and submarines) can approach its territory;
 - In Europe, strategically tangible distances can be relatively short (smaller countries, relatively small seas, such as the Baltic or the Black Seas) and missiles with ranges less than 500 km can nonetheless achieve strategic effect;

- Finally, there has been significant proliferation of missiles with the range of 300 km or more – the category that was almost “empty” in the 1980s.

Limited focus of notification and transparency regime(s) does not mean that other high-risk elements of the present and future security environment will remain unattended. Relevant information and clarifications can be volunteered or provided upon request on a case-by-case, ad-hoc basis through the risk reduction network discussed above.

1. The most immediate goal should be expansion of the volume of notifications to include activities associated with long-range missiles: Notifications about launches of long- (theater-) range ballistic and cruise missiles with ranges of 300 km and above, similar to the notification regime for strategic ballistic missiles between the United States and Russia. If such an intrusive measure is difficult to negotiate right away, perhaps an earlier US-Soviet regime could be used as a precedent – notifications about simultaneous launches of several long- (theater-) range missiles. Eventually it could develop into a stricter regime of notifications about single launches, as it has happened in the US-Soviet/Russian context.

Advance notifications about exercises involving strategic and/or theater-range strike weapons. Notifications about exercises are important because they almost always involve increased alert level and thus could cause concern on part of potential adversaries. Such notifications will generally follow the Vienna Document pattern, but requirements may be somewhat relaxed and notifications could be sent a week or less (rather than months) before the beginning of each exercise. They could include the date of the beginning, the date of the planned completion, and the scale of exercise (the estimated number of weapons that will be involved).

Notifications about snap exercises involving strategic and/or theater-range strike weapons. The rationale is the same as in the previous case, but snap exercises can present a challenge – Russia has conducted multiple snap exercises of its conventional forces in violation (of spirit, if not the letter) of the Vienna Document. Notifications about exercises of mobile ICBMs in START treaties, which are provided after the beginning, can serve as a precedent. Given the sensitivity of heightened alert of theater-range conventional and dual-capable weapons, it may be advisable to provide the notification shortly after their beginning – six or 12 hours after the fact. The notifications could include, as in the previous case, the date the exercise began, the planned date of completion, and its scale.

One challenge that is likely to emerge if the agreement is reached only among nuclear-weapons states is the role of the third parties. For example, how the United States, China, and Russia handle launches by North Korea, which will not be notified in advance. The same challenge applies to other countries, of course, both in Asia and in Europe, but North Korea is a particularly tough case because it is the least likely to join any international arrangements with respect to notifications and transparency. Tracking the origin of missile launches should help (North Korea’s launches are successfully tracked in real time by neighboring countries) as will exchange of data among nuclear-weapons states about such launches through the risk reduction network.

2. Transparency of deployed and stockpiled weapons: Transparency of deployed and stockpiled long- (theater-) range strike weapons is desirable because it can significantly enhance confidence of parties in the stability of the strategic and regional environment and alleviate concerns about the risk of surprise large-scale attack against their armed forces and critical infrastructure. In the present political circumstances, however, tangible transparency measures are hardly feasible. Further, the emerging tense military stand-off may favor maximum secrecy and opacity, especially on part of China and Russia, which associate transparency with vulnerability. Nonetheless, it is advisable to contemplate enhanced transparency as a longer-term project. Where it concerns long- (theater-) range missiles, the following measures may be useful:

- **The Open Skies Treaty** would be a perfect solution as it could provide reasonably accurate data about deployed forces and have minimal impact on their survivability if surveillance at any given moment applies only to a limited area. It can also have a broader scope – not only long-range missiles, but also other forces, including navies. This option is also the most politically challenging: it presumes that the United States and Russia return to the Open Skies Treaty (and the Treaty should survive until this happens) along with China and other countries from the Asia-Pacific. Another challenge associated with the Open Skies regime is that it cannot be limited to just nuclear-weapons states and will require participation of many more states. Feasibility of implementing that option appears low, but it should not be discarded.
- **Advance notifications about the intention to move a significant number of long-range missiles into a specific area.** Such a movement may represent a serious concern. In all likelihood, relocation of a significant number of long-range missiles will be detected through national technical means, but unannounced transfer is bound to trigger serious concern as an indication of possible preparation for attack. Thus, it would be beneficial to remove as much uncertainty about the scale and the intention of such relocation as possible. The definition of “significant” will have to be negotiated; it may be an agreed number (100 missiles, for example, or more) or an agreed share of the existing deployed force (the latter requires knowledge about the existing force – see next bullet). Particularly sensitive may be relocation of sea- and air-launched long-range missiles by ships, submarines, and aircraft: these may be relocated quickly and thus noticeably increase the available force of such missiles on short notice (the Russian propensity to deploy long-range missiles on large number of small ships and submarines is of special concern).
- **Declaration (confidential or public) of the number of deployed and stockpiled long-range missiles in a given region.** In the absence of data about precise locations, such declarations should not increase the vulnerability of the force. Lack of verification will, of course, reduce the value of data provided through unilateral declarations, but as a confidence-building measure such an agreement could go a long way toward reducing tensions and mutual suspicions. Such a measure should include notifications about movement of significant numbers of long-range missiles into the region (see above), providing a reasonable degree of assurance about non-increase of the number of deployed and stockpiled missiles.

Feasibility Assessment

Even the best plans can remain unimplemented. The need for a deepened effort to reduce risks of unintended or accidental direct military conflict between nuclear weapons states may be understood and even shared, but without political will, shared interest will not become policy and will not be reflected in international agreements. Today, that political will is de facto absent, in spite of public assurances by all parties concerned to the contrary. Nuclear weapons states as well as some of their allies and partners prefer a confrontational approach and seem to support agreements only on the condition the other party (parties) accept their preferences. Propensity to negotiate and compromise appears minimal.

Stumbling blocks are distributed unevenly:

- Among the nuclear weapons states, China does not believe in risk management understood as a set of measures developed during the Cold War: from the perspective of Beijing, these measures are intended for management of war rather than its prevention; it believes that prevention of war requires, instead, a fundamental change of policy by the United States and its allies and partners.
- Russia has an impressive background in risk reduction and conflict management arrangements inherited from the Cold War and those negotiated more recently; it has retained most bilateral US-Russian risk reduction and confidence building measures intended to prevent strategic war even as it has, step by step, dismantled arms control agreements. Thus, the understanding of the role, the benefits, and the shortcomings of such measures, as well as the mechanics of their implementation are still there, although a generational transition in the Foreign and Defense Ministries is gradually depleting the ranks of officials and experts with hands-on experience. Today, however, Russia is in the state of a comprehensive conflict with the West, in which it invokes the risk of escalation, including and especially to the nuclear level, to prevent its adversaries from directly engaging in the war it conducts against Ukraine. Any serious risk reduction measures could reduce the credibility of such threats and thus it will hardly contemplate serious work on risk reduction until the international environment becomes more stable.
- The United States and its allies and partners have strong interest in risk reduction and confidence building measures; they actively pursue them in the P-5 context (so far unsuccessfully). US proposals, however, primarily emphasize multilateralization of measures developed during the Cold War and restoration of those from which Russia has withdrawn in recent years. As noted above, legacy regimes do not address new risks and capabilities, hence this agenda looks outdated and may only be contemplated as the first step(s). Moreover, these measures do not address some important Russian concerns and were Moscow to agree to discuss new risk reduction tools in the P-5 context or bilaterally, it will view US proposals as insufficient and leaving areas of US and allied strengths untouched.
- For all the P-5, political will to seriously engage in negotiations about risk reduction and confidence building measures is virtually absent[1] . Attitude of all parties is informed by the feeling of righteousness, belief that their position is the only “right” one and constructiveness of other P-5 is measured by their readiness to accept that position. There is little effort to develop new approaches to risk reduction and confidence building, which could address concerns of other parties.

It can be said with high degree of certainty that little movement forward is possible while the war in Ukraine continues; this remains the main stumbling block. As long as the war continues, the political conflict and mutual mistrust will remain so high that constructive dialogue will remain very difficult, if not impossible, perhaps even for some time after the war ends, one way or the other, or is frozen for an extended period of time: the very notion of negotiations with Russia will not gain sufficient support in the US political process while the negative arms control record of the last decade, if not longer, preceding the Russian aggression will make many (if not the majority) doubt the desirability and, in fact, the feasibility of negotiating with Moscow. If a formal bilateral dialogue between Washington and Moscow resumes on strategic stability issues (which risk reduction talks would likely be a part of), the US may also face opposition from some of its allies, including non-nuclear ones – several of them are known for a considerably tougher attitude toward Russia and are likely to frown on the resumption of such dialogue.

Similarly, opposition may be strong in Russia: the wide-spread perception, especially in the military, is that the United States and NATO are actively involved in the war, including provision of intelligence data to Ukraine. This will severely limit readiness to contemplate notifications and transparency measures (continuing a long line of opposition to these measures evident for many years in the Russian attitude toward the Vienna Document).

Not only will radically worsened political relations hinder resumption of dialogue on security relationships, but also more practical issues. As war continues and Western assistance to Ukraine continues to increase both quantitatively and qualitatively, Russia may see a need to manipulate the risk of direct conflict to contain direct involvement of the West. Extensive risk reduction measures – and even just a robust communications network proposed above – could impair Russian ability to leverage nuclear weapons in the conflict with the United States and NATO at least while the war (or its active phase) continues. The importance of this limitation is likely to decline after the war.

After the war ends or is frozen, it may become possible to engage in a dialogue on risk reduction, which should perhaps start as confidential. This endeavor will be facilitated by the nature of the issue itself: risk reduction is politically and psychologically less controversial than arms control. The need to avoid direct conflict is well understood by all parties and especially the United States and Russia (as well as Europeans) given their shared experience since the 1970s. The end of war will shift the conflict into a more stable phase reminiscent of the Cold War, when risk reduction was born. All this may open space for bilateral interaction. At that stage, China may become the greatest impediment because it lacks experience in risk reduction and confidence building and also because it has not yet concluded such measures will be beneficial. If Russia once again embraces risk reduction as a desirable activity, it may help educate its Chinese partners about its benefits and low costs.

To move forward, all parties need to internalize several lessons from the Cold War:

- Risk reduction is a primarily technical endeavor. These agreements do not require changes in nuclear doctrines, employment guidance, force structures or deterrence postures.

- Risk reduction does not remove or even reduce the probability of intentional armed conflict, whether limited or global. It only helps avoid unintended crises or conflicts, which may arise from misperception, miscommunication, miscalculation, accident, or other similar developments. This function is, without doubt, important and valuable, but the political and strategic roots of conflict would require more serious effort and compromises, first and foremost serious engagement in arms control as well as political settlements.
- Risk reduction does not entail increased vulnerability of armed forces and thus does not encourage attack. It deals primarily with clarification of intentions and greater sensitivity to how the other party views one's activities.
- Risk reduction does not require an atmosphere of trust to launch the effort but may help increase trust – especially in military-to-military relations – as it continues to be implemented. As such, it may help pave the way for more tangible measures, such as transparency and confidence building. This transition is far from guaranteed, however, and will require additional efforts, mobilization of domestic support, and political decisions.
- It is possible to withdraw from risk reduction regimes any time. Since these measures do not affect military postures, the impact of withdrawal on defense policy will be minimal.

In short, the function of risk reduction is limited, but these limitations make cooperation more likely because they require fewer efforts on part of potential participants and are likely to be less controversial domestically.

Although risk reduction is primarily about technical issues, it may nonetheless also be advisable to take a leaf from the US-Soviet experience of the 1970s, as described above, and consider a combination of technical measures and broad political principles of relations. This may be particularly relevant given the stance of China, which, very much like the Soviet Union in the past, is interested in agreeing on the “rules of the road” as a method of preventing conflicts. In the past, Washington’s agreement to discuss broad political principles helped achieve tangible progress on technical risk reduction measures and there is no reason why a similar approach cannot work today.

Among other possible risk reduction measures, communication may be the least controversial issue-area, hence it may make sense to intensify dialogue in that issue-area. One potentially encouraging sign is the attitude of Russia toward the possibility of escalation vis-à-vis NATO: just as the United States has been careful not to trigger Russian escalation, Moscow has also largely limited itself to statements (sometimes strongly worded) and has been careful to avoid actions which could put it on an escalation path of no return. This may be treated as evidence that Russia remains wary of escalation risks.

The fact that China, the United States, and Russia have all sent advance notifications about missile launches in the fall of 2024 also makes one cautiously optimistic. In particular, it may be evidence that Beijing understands the value of certain types of transparency despite resisting formalizing a notification agreement with Washington. Over time, if such voluntary notifications continue, a practical entity in China for the transfer of notifications and/or other types of messages may eventually face less opposition than has been the case before.

Thus, while immediate action on formalizing concrete measures does not appear likely, first steps nonetheless remain possible in the near future. It is advisable to begin preliminary discussions, including development of technical support options, as soon as possible, so that parties are ready to act when the political environment becomes more conducive for practical negotiations.

Reliable 24/7 communication – the risk reduction network described in this paper – could be the least controversial option. Its implementation needs only a political decision and relevant technical support but does not affect military posture or operations of armed forces. Moreover, the implementation of that measure can help actors with less experience in risk reduction like China to familiarize themselves with the issue-area and develop a habit of sustained communication with other P-5 and cooperation in reducing the risk of unintended military conflict.

Since direct contacts between the P-5 on risk reduction have not yet yielded results and, in all likelihood, will not yield results in the near future, it is advisable to intensify contacts in the Track 2 format. Such contacts should promote better understanding of the benefits and the requirements of a P-5 risk reduction network and indirectly facilitate beginning of a dialogue between governments (perhaps moving at some point to the Track 1.5 format). Particularly valuable are contacts between US, Russian, and Chinese NGOs, both in three bilateral channels and, where and when possible, also trilateral. In addition, the ongoing Track 2 efforts tied to the P-5 Process should be better capitalized on by the involved governments.

Also, the P-5 does not exist in a vacuum. Although it is up to them to agree on new risk reduction measures, including to help implement past commitments under the NPT, the international community can and should contribute to the process. After all, risk reduction is in everyone's interest, not just the interest of the P-5, although responsibility primarily rests with them. Accordingly, it is desirable not to limit discussions to the P-5, whether in Track 2.0 or 1.5 format, and hold in parallel broader-based discussions with non-nuclear weapons states contributing to both the substance and the atmosphere. In turn, the P-5 will find it harder to avoid cooperation.

The main focus of Track 2.0 and 1.5 meetings, both in the P-5 and broader international format, should be to clarify how exactly all interested parties see future measures, where they see challenges that need to be addressed, and identify possible areas of shared interest and/or areas of compromise – elements that may be acceptable to all parties (acceptable concessions). As noted above, shared interest is not enough for success: forward movement also needs political will, which is required for reaching a consensus, which necessarily presumes modifications in one's position to meet the concerns of others. Since such modifications are not likely at the official level in the near future, informal discussions could pave the way.

At the same time, P-5 governments should use their previous NPT working paper on strategic risk reduction as a basis for an agreement on principles of policy, which can be general and subject to interpretation. The 1971 Accidents Measures Agreement and to an even greater extent the 1973 Prevention of Nuclear War Agreement provide helpful precedence. If possible, such a statement on principles of policy could be issued by political leaders at the ministerial or head-of-state level.

Conclusion: Reimagining Risk Reduction

Today, the risk of great power conflict appears to be the highest since the end of the Cold War and perhaps even further back in time. The central risk today is not a nuclear World War III involving exchange with massive strategic strikes, however, but rather the possibility of a relatively low-level conflict – perhaps unintended or accidental – quickly escalating to the nuclear threshold and, in the worst case, crossing it. Accordingly, measures that were intended to prevent large-scale nuclear war between superpowers are no longer sufficient and need further development and enhancement.

Unfortunately, at the time when such measures are particularly needed, achieving them is most difficult: the deepening East-West crisis, where East is no longer limited to Russia but also includes China; the Russian war against Ukraine, which has brought Moscow to the brink of direct military confrontation with NATO; the Russian refusal to compartmentalize arms control and risk reduction from other issue-areas constructive engagement is extremely difficult, if at all possible. Worse, the Russian plans to leverage nuclear threats to prevent or at least limit Western assistance to Ukraine radically reduce its propensity to work on measures to reduce the risk of nuclear use. In the meantime, many risk reduction measures, which were agreed upon during the Cold War, are being dismantled or weakened, especially those applied to Europe.

Nonetheless, the task of negotiating a new, expanded set of measures to reduce the risk of nuclear war remains on the agenda in spite of challenges, which, one hopes, are temporary. The world has lived through tough crises before and, in fact, such crises have usually created additional incentives for progress in risk reduction and arms control. The Madrid Mandate (which set the negotiating mandate for the Stockholm Document), was agreed during the height of the Euromissile crisis in 1983 when the Able Archer incident also brought the United States and the Soviet Union, as well as NATO and the Warsaw Pact, to the brink of large-scale war. In 1985, the sides were able to agree on a significantly expanded and strengthened confidence building regime. This echoed memories from two decades earlier when the Cuban Missile Crisis resulted in the first US-Soviet hotline.

While progress remains possible, perhaps in a few years, if not sooner, an agenda on an updated set of risk reduction measures remains uncertain. The most obvious initial step is the restoration and the multilateralization of Cold War regimes, including notifications about ballistic missile launches, which are not yet universal among nuclear weapon states. The old package, however, does not appear sufficient at the time when the nature of risks and possible contingencies that could result in dangerous escalation have changed rather dramatically. Focused work is needed to develop and promote a new set of measures to address new risks – first by nongovernmental expert organizations and Track 2.0 dialogue, then hopefully shifting to Track 1.5 level, so that when political conditions are ripe for action by nuclear weapon states, possible options are already available and sufficiently well explored. This could facilitate and expedite intergovernmental engagement and help bring about new regimes faster than if negotiators have to develop new agreements from scratch.

Considering the broad variety of escalation scenarios, perhaps the most important task is to ensure constant communication among the P-5 and perhaps in the future other nuclear-armed states and relevant actors to give them an opportunity to quickly clarify any issues of concern and resolve small conflicts before they may escalate. In the absence of the habit of constant communication, especially for some states, and growing preference for opacity instead of transparency, development of risk reduction

culture may be difficult, but represents the only feasible way toward a reasonably reliable regime for preventing dangerous confrontations, which could escalate to large-scale conflict.

Relations among states are never smooth, especially in the security realm and especially when relations among key players are strained, perhaps even hostile. Misunderstandings, suspicions, false alarms, or other similar situations are inevitable. There is no reason, however, why these must turn into serious problems and trigger arms races and military confrontations. Reduction of risk of conflict requires two components – relevant tools and political will. Both are within reach and do not carry serious political or other costs. Emergence of a culture of risk reduction may take longer but is certainly not unfeasible. The key condition is shared understanding of the risks each state, in particular major powers, face if the current estrangement and hostility continues. Shared interest is there, one only needs political will.



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