Subgroup 3

Interim Measures to Reduce the Risks Associated with Nuclear Weapons

Compendium of Texts

Considered by Subgroup 3 in the Period of November 2019 to December 2021

These texts have been prepared under the responsibility of the Co-Chairs, Ambassador Michael Biontino and Ambassador Jarmo Viinanen, and assisted by the NGO-facilitators Sico van der Meer and Wilfred Wan, to facilitate the work of Subgroup 2, reflect the discussion and contribute to progress on Nuclear Risk Reduction in general.

1. Concept Note[1] for Subgroup 3

Interim Measures to Reduce the Risks Associated with Nuclear Weapons

As states aim to achieve a world free of nuclear weapons, it will be necessary to pursue interim measures to enhance security and reduce all risks associated with nuclear weapons and the likelihood of nuclear weapons use. Such measures could greatly contribute to an improved overall international security environment and enable and support further progress towards nuclear disarmament. The CEND initiative is not the first initiative to consider nuclear risk reduction measures. However, the wide range of policy positions among participating states and the inclusive and informal nature of the dialogue at CEND Working Group meetings will allow for a different type of discussion than has occurred elsewhere.

The work of Subgroup 3 will focus on exploring nuclear risk reduction measures and analyzing the practicality of the identified measures. Identifying factors that could possibly contribute to the risk of nuclear weapons use will allow the subgroup to focus on risk reduction measures that would address those factors. In addition, much work has already been done in examining possible options for risk reduction. In order to not duplicate existing work, the subgroup will examine other efforts and where possible draw on their results to inform the work of Subgroup 3. Participants at the first CEND Working Group meeting acknowledged the existing body of work on risk reduction but noted there has been a lack of dialogue, particularly between states with and without nuclear weapons, on why some commonly identified measures may be possible and some others may not be. Subgroup 3 will work to develop a well-considered review of the viability and desirability of identified risk reduction measures. This could contribute substantially to discussions in other relevant fora.

Subgroup 3, in close coordination with Subgroups 1 and 2, has the following areas of focus:

- Identify ways and operative measures to reduce the risk associated with nuclear weapons, including through conflict prevention and management in all its aspects;

- Build trust through confidence and security confidence building measures (CSBMs) in the area of risk reduction; and

- Build confidence by improving communication, dialogue, transparency and understanding among states possessing nuclear weapons as well as among states possessing nuclear weapons and those that do not.

Subgroup 3 will start by focusing on the following:

[1] The CEND Working Group is not constrained by traditional formats, protocols, or procedures. Participants are encouraged to engage in an open and broad-ranging dialogue. This concept note is intended as a dynamic guide for future discussion and work. It does not necessarily reflect the views of all participants.

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- Review ongoing and previous efforts and initiatives on nuclear risk reduction and examine their resulting outputs, drawing also from experiences in the conventional field (e.g. Vienna Document);

- Identify risk factors associated with nuclear weapons and consider a menu of concrete and actionable options for risk reduction measures in accordance with its stated goals and objectives (see above). These measures could be unilateral, bilateral, and/or multilateral; and

- Conduct a dialogue on the viability and desirability of this menu of options to increase understanding between nuclear and non-nuclear weapon armed states on what risk reduction measures can and cannot contribute to an improved security environment and under which conditions.

Leadership:

Finland and Germany will serve as co-chairs of subgroup 3.

Timeline:

The nest step for subgroup 3 is to develop a program of work, which is expected to include deliverables that would be completed within roughly two years. Considering the complexity of the topic, the subgroup may also consider longer-term deliverables. Subgroup 3 will aim to coordinate its timeline with the other Subgroups, to the extent practical.

2. Annotated Program of Work

Working Methods

It is proposed that the subgroup on nuclear risk reduction at its first substantive meeting would undertake to cover all items on its agenda in order to identify:

- first lines of convergence
- areas where further substantive input seems appropriate to inform its work (working papers[2] or presentations by participants, academia, international organizations, NGO's and civil society)
- areas where additional in-depth discussion at forthcoming meetings is required
- a sequence for such future in-depth discussion.

In this context it is proposed to start with a concise discussion of Item 1 (General Considerations) in order to allow for an early start of substantive discussions under Item 2 (Review of all ongoing and previous efforts and initiatives) and Item 3 (Risk factors and menu of concrete and actionable options).

To initiate a substantive discussion under Item 2 and in order to consider risk reduction measures (Item 3) under discussion in particular in academia, NGOs and civil society, it is proposed that respective synthesis papers are prepared in advance by the CEND NGO experts.

Furthermore, it is proposed that the conclusions of these deliberations will be reflected in a draft working paper, established by the co-chairs and open to comments by all participants, which will contain a faithful reflection of all views brought forward during the deliberations of subgroup 3

- to be further developed over the course of the ensuing meetings
- with a view to develop a full menu of concrete and actionable options for risk reduction measures for consideration in all relevant fora

Substantive Items for a Program of Work[3]

[2] Working papers could mainly be exchanged/considered in the intersessional periods

[3] This draft program of work follows a generic approach in order to allow for an open discussion and not to prejudge specific risk reduction measures

Item 1: General Considerations

1. As a basis for an eventual clustering of possible risk reduction measures, which are aimed at preventing nuclear weapons use, taking into account i.a. the prevention and mitigation of the humanitarian consequences of their use, a menu of options is proposed to come to an understanding concerning important purposes and functions of risk reduction measures relative to the existence of nuclear weapons. This would entail a review of the entire spectrum of concrete risk reduction measures[4], with a view of:
   - differentiating short, medium and long term perspectives,
   - identifying concrete and actionable options for risk reduction measures.

   These purposes and functions[5] could include i.a.:
   - to reduce the risk associated with nuclear weapons use based on intention, miscalculation or accident,
   - to enhance security and safety in general,
   - to strengthen mutual trust
   - to act as an effective interim measure to increase confidence in the international security environment and
   - to facilitate further steps in nuclear disarmament and towards a world without nuclear weapons.

2. In order to structure the discussion and to take into consideration of work done and ongoing on Nuclear Risk Reduction and in order to clearly distinguish its various aspects it might be useful to address Nuclear Risk Reduction (NRR) measures in different categories, e.g.:
   - Political-Doctrinal Measures
   - Strategic measures
   - Operational measures
   - Confidence and Security Buildings Measures and
   - Crisis and Conflict Prevention and Management Measures

   These aspects are complementary (and overlapping) for a full spectrum Nuclear Risk Reduction approach and do not necessarily build on or require each other and could be undertaken separately.[6]

3. Furthermore, the issue on how and where concrete Nuclear Risk Reduction measures should be dealt with, i.e. unilaterally, bilaterally, amongst nuclear armed states only, on a

[4] In the course of this review CEND participants are encouraged to put forward specific risk reduction measures which seem to be of particular relevance
[5] Including a better understanding of the nexus between nuclear weapons and other relevant military systems
[6] For examples concerning concrete risk reduction measures see i.a.

- Sico van der Meer, Reducing Nuclear Weapons Risks, a Menu of 11 Policy Options, Clingendael 2018
- Wilfred Wan, Nuclear Risk Reduction, A Framework for Analysis, UNIDIR 2019

regional basis, where appropriate, or multilaterally merits further in-depth analysis and discussion on a case by case basis[7].

Item 2[8]: Review of all ongoing and previous efforts and initiatives on nuclear risk reduction and examine their resulting outputs, drawing also from relevant experiences in the conventional field

1. It is proposed to include under this item all efforts and initiatives and analyze their effectiveness and applicability in the present day security environment.
2. Furthermore, subgroup participants are encouraged to communicate their views within subgroup 3 in advance in writing.

Item 3: Identify all risk factors associated with nuclear weapons and consider a full menu of concrete and actionable options for risk reduction measures in accordance with the subgroup area of focus (see concept note)

1. It is suggested that identifying risk factors, based on relevant facts and findings, and considering corresponding and appropriate risk reduction measures are undertaken concurrently in order to allow for a coherent discussion.
2. Furthermore, subgroup participants are encouraged to share their views in advance in writing

Item 4: Conduct a dialogue on this menu of options to increase understanding among nuclear armed states and between nuclear and non-nuclear weapon armed states. Identify risk reduction measures which can contribute to an improved security environment, and under which conditions, differentiating short, medium and long term perspectives, and how and where these risk reduction measures could be addressed.

1. It is proposed that this dialogue should be undertaken, once the outlines of "a menu of concrete and actionable options for risk reduction measures" (see item 3) have become clearer.
2. Furthermore, it seems important to come to as much shared understanding as possible, with due regard to possibly different views.

[7] A roster of unilateral, bilateral, amongst nuclear armed states only, on a regional basis or multilateral risk reduction measures could be reflected in the subgroup's draft working paper
[8] The following items correspond to the concept note for subgroup 3

3. Purposes, Functions and Categories of Nuclear Risk Reduction Measures

Interim nuclear risk reduction measures are needed as long as nuclear weapons exist. Such measures can greatly contribute to an improved international security environment, enabling and supporting progress towards nuclear disarmament[9]. Nuclear arms control and risk reduction are complementary to nuclear disarmament.

Measures enhancing international peace, security and stability lower the risk associated with nuclear weapons in general, the likelihood of nuclear weapons use and as well as any armed conflict between NWS. Therefore, a holistic approach to risk reduction seems to be appropriate, including

- efforts to develop politically binding confidence and security building measures and legally binding treaties and
- concrete risk reduction measures, covering political-doctrinal measures, strategic measures, operational measures, confidence and security building measures and crisis and conflict management measures.

In recent years the international security environment has deteriorated, great power strategic competition has re-emerged and nuclear risks have become again a prime concern.

The relevance of nuclear risk reduction measures has been amplified by, in particular, by developments with the potential of creating new instabilities and imbalances:

- the present stress on the nuclear arms control, disarmament and non-proliferation architecture,
- perceived lowered threshold by some for the use of nuclear weapons (e.g. doctrinal changes/uncertainties in conjunction with non-strategic and low-yield nuclear weapons)
- new delivery systems (e.g. dual-capable systems, hypersonic glide vehicles, nuclear-powered cruise missiles) as well as new strategic defence systems.
- new technologies and capabilities (inter alia conventional high impact precision weapons, cyber, artificial intelligence/machine learning, threats and security risks to space systems) which risk to blur the lines between conventional weapons and weapons of mass destruction,

[9] See Concept Note for Subgroup 3

- the emergence of new regional crises scenarios, with global political and economic implications, involving NWS as well as NNWS relying, in particular, on asymmetric means of warfare, and thus of the specter of regional crises spiraling out of control.

Before this backdrop the concrete purposes and functions of nuclear risk reduction measures are to lower and eliminate the nuclear risks associated with[10]

- intentional use - in accordance with declaratory policies and ambiguities thereof,
- use by miscalculation - based on incorrect assumptions or linked to a conflict or crisis spiraling out of control,
- accidental use - linked to error, technical malfunction or false alarm,
- unauthorised use – non sanctioned use or use by non-state actors.

and by the same token

- to enhance security at the strategic and regional level,
- to increase confidence in the international security environment,
- to enable and support further steps in nuclear disarmament and towards a world without nuclear weapons.

In order to structure the discussion and to take into consideration work done and ongoing on nuclear risk reduction and in order to clearly distinguish its various aspects it seems useful to address nuclear risk reduction measures in different categories[11], as mentioned above:

- Political-doctrinal measures: commitments regarding decreasing the role of nuclear weapons in doctrines and security policies and limiting the circumstances under which these weapons may be used, including transparency on these measures.
- Strategic measures: changes in the deployment of nuclear weapons, including reductions, restrictions and increased protection of nuclear weapons systems, as well as commitments with regard to targeting.
- Operational measures: changes in operational procedures, including launch, storage and transport procedures.
- Confidence and security building measures: increased dialogue, information exchange and transparency regarding anything related to nuclear weapons.
- Crisis and conflict prevention and management measures: improving crisis and conflict prevention and management mechanisms in order to prevent any situation escalating towards potential nuclear levels.

[10] A detailed discussion of concrete nuclear risk reduction measures, and the role NWS as well as NNWS would assume, will be conducted under Item 3 of the annotated Program of Work: "Identify all risk factors associated with nuclear weapons and consider a full menu of concrete and actionable options for risk reduction measures….".

[11] The policy implications in different scenarios, i.a. intention, miscalculation, accident and unauthorized use, as well as adequate political processes to promote nuclear risk reduction measures will be discussed under Item 4 "Conduct a dialogue on this menu of options to increase understanding among nuclear armed states and between nuclear and non-nuclear weapon armed states. Identify risk reduction measures which can contribute to an improved security environment, and under which conditions, differentiating short, medium and long term perspectives, and how and where these risk reduction measures could be addressed"

4. Synthesis Paper on ongoing and previous efforts and initiatives on risk reduction in the nuclear field

Various efforts have been made in previous decades to reduce the risk of nuclear weapons being used. These efforts have been taken unilaterally, as well as in a bilateral or multilateral framework. Without claiming any completeness, the Annexes I to III provide an overview of past examples of nuclear risk reduction initiatives, split into three categories: binding measures, non-binding measures, and forums for dialogue. Only actual agreements and initiatives are included, not policy proposals that have not been implemented.[12]

These previous risk reduction measures cover many different policies, ranging, for example, from unilateral No First Use declarations to unilateral decisions to eliminate nuclear weapons arsenals, and from bilateral political statements to multilateral legally binding treaties.

This broad range of risk reduction measures from past decades may be helpful to explore risk reduction policy options for the future, even though these previous efforts do not cover all policy options that might be envisaged (a more complete menu of options will be discussed under Item 3 of the Plan of Work of this Working Group)

In line with the categories for risk reduction measures as discussed under Item 1 (General Considerations), the following generic nuclear risk reduction measures can be taken from previous initiatives and efforts[13]:

Political-doctrinal measures:

- Increased transparency on nuclear policy documents such as doctrines and postures
- Commitments of no first use
- Limiting geographic locations of nuclear weapons deployment
- Establishment of nuclear-weapon-free zones
- Banning classes of nuclear weapons and/or delivery systems and/or defensive systems

[12] Proposals for nuclear risk reduction measures which have not been agreed on yet, for example those tabled during the Open Ended Working Group, the UNGA First Committee, or the Stockholm Initiative, will be included in the next phase of this working group, were all thinkable options for nuclear risk reduction will be discussed.

[13] These risk reduction measures do overlap to a certain degree and are only an abstract of previous efforts and initiatives on risk reduction to allow some general overview of possible options. For more details, please see the attached Factsheets I to III.

- Elimination of nuclear arsenals

Strategic measures:

- Increasing protection of nuclear-related facilities, materials and systems
- Agreements not to attack nuclear-related facilities
- Changes to alert status of nuclear weapons
- Increasing non-proliferation efforts
- Reductions in numbers of deployed nuclear weapons

Operational measures:

- Enhancing safety and security of nuclear weapons and materials

Confidence and security building measures:

- Dialogue and information exchange on pertinent issues
- Notification of nuclear-related incidents
- Pre-launch notifications
- Pre-notification of actions susceptible to misinterpretation
- Commitments to refrain from the threat or use of force
- Political statements against nuclear conflict

Crisis and conflict prevention and management measures:

- Ensuring clear lines of communication in crisis situations
- Establishment of Nuclear Risk Reduction Centres to exchange notifications of missile launches and other relevant information
- Establishment of crisis and conflict prevention and management mechanisms

Factsheet I: Examples of *binding* measures contributing to nuclear risk reduction, sorted by date of entry into force

1961: Antarctic Treaty

Multilateral treaty prohibiting the militarization of Antarctica. It prohibits the stationing or testing of any kind of weapons including nuclear weapons in the Antarctic. In addition, no military bases or facilities may be established and all actions of a military nature, as well as all nuclear explosions and the disposal of radioactive waste material in Antarctica, are banned. Verification of compliance is assured through inspections. All areas in Antarctica, including stations, installations and equipment, ship and aircraft debarkation and embarkation points are subject to unlimited on-site and aerial inspections. Parties are to notify each other of stations to be established, of expeditions to be undertaken to and within Antarctica, and of any military personnel or equipment that may be placed in Antarctica. Disputes that cannot be settled through talks, mediation or arbitration, can be referred to the International Court of Justice.

1963: Partial Test Ban Treaty (PTBT) (Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water)

Multilateral Treaty which obliges parties not to conduct any nuclear explosions in the atmosphere, under water, and in outer space. Underground nuclear explosions are not banned except when radioactive debris is released outside of the territorial limits of the State conducting the explosion. These are, however, now banned by the Comprehensive Test Ban Treaty (CTBT). Verification of PTBT obligations is carried out through national technical means (NTMs) which are nationally owned instruments for surveying a party's compliance with agreement obligations without intruding onto its territory, airspace, or national waters.

1967: Treaty of Tlatelolco (Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean)

Multilateral treaty establishing a nuclear-weapon-free zone (NWFZ) in Latin America. The Treaty prohibits parties from testing, using, manufacturing, producing, or acquiring nuclear weapons or participating in such activities aimed at any of these ends. Parties are also prohibited from storing, deploying, or possessing nuclear weapons. All nuclear materials and facilities are to be used exclusively for peaceful purposes. Verification of compliance with the provisions of the Treaty is ensured through negotiated agreements between the States parties and the IAEA which applies safeguards to all nuclear activities taking place within the territory of each signatory. The Agency for the Prohibition of Nuclear Weapons in Latin America (OPANAL) holds regular meetings regarding the purpose of the Treaty and also oversees compliance. The Treaty's area of application includes the territory, territorial seas, airspace and any other space over which a signatory exercises sovereignty in accordance with its own legislation. To ensure

that the NWFZ is also respected by States that do not belong to the region but exert their sovereign rights over territories in the region, Protocol I of the Treaty requires that these States apply the provisions laid out in the Treaty to their territories in the region. Protocol II calls upon all declared NWS to respect the denuclearization of the region and not to use or threaten to use nuclear weapons against the contracting parties.

1967: Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies)

Multilateral treaty prohibiting the deployment of objects carrying nuclear or other kind of weapons of mass destruction (WMD) in orbit, on celestial bodies, or in outer space. Further, the moon and other celestial bodies are to be used exclusively for peaceful purposes, and the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military manoeuvres on celestial bodies, is forbidden.

1969-2021: SALT / START / SORT / New START Treaties (Strategic Arms Limitation Treaties I and II, Strategic Arms Reduction Treaties I and II, Strategic Offensive Reductions Treaty, New Strategic Arms Reduction Treaty)

Series of bilateral agreements between the Soviet Union / Russia and the United States limiting the number of strategic nuclear weapons deployed by each country. The treaties use the principle of equal aggregate ceilings on various types of strategic nuclear delivery vehicles. The reduction of nuclear warheads to the agreed limits can be achieved through several methods, including conversion and elimination. Compliance is verified through on-site inspections as well as through national technical means (NTMs), which are nationally owned instruments for surveying a party's compliance without intruding onto its territory, airspace, or national waters.

1970: Non-Proliferation Treaty (NPT) (Treaty on the Non-Proliferation of Nuclear Weapons)

Multilateral treaty distinguishing between nuclear-weapon States (NWS) and non-nuclear-weapons States (NNWS). NWS are defined as those that have exploded a nuclear device prior to 1 January 1967, and comprise China, France, the Soviet Union (now the Russian Federation), the United Kingdom, and the United States. NNWS are those parties that have renounced the acquisition of nuclear weapons. The NPT contains four main provisions inscribed in its first six articles. First, NWS are prohibited from transferring or from assisting others in acquiring nuclear weapons and related technologies, or control over these, and NNWS are prohibited from receiving or developing nuclear weapons. Second, nuclear safeguards are established to ensure that fissionable material produced or used in nuclear facilities of NNWS is employed solely for peaceful purposes. These safeguards are to be administered by the International Atomic Energy Agency (IAEA). Third, the NPT recognizes the right of all parties to research, produce, and use

nuclear energy for peaceful purposes. It permits NWS to assist NNWS in the peaceful exploitation of nuclear technologies. Finally, the NPT calls for all parties to negotiate in good faith measures related to nuclear disarmament, and a treaty on general and complete disarmament under strict and effective international control. The NPT is considered to be not a static agreement; during the five-yearly Review Cycle of the treaty, States Parties sometimes commit to measures not explicitly mentioned in detail in the treaty itself; an example is the 2010 Action Plan.

1972: Anti-Ballistic Missile (ABM) Treaty

Treaty between the Soviet Union and the United States prohibiting the deployment of defence of national territory against strategic ballistic missile attacks. Yet, as modified by a Protocol signed in 1974, the Treaty permitted both parties one deployment area each for ABM defences to protect either the national capital or an intercontinental ballistic missile (ICBM) deployment area. To promote the objectives and implementation of the Treaty, the parties established the Standing Consultative Commission (SCC).

1985: Treaty of Rarotonga (The South Pacific Nuclear Free Zone Treaty)

Multilateral treaty establishing a nuclear-weapon-free zone (NWFZ) in the South Pacific. The treaty prohibits the manufacturing, acquisition, stationing or control of nuclear weapons on the territory of States parties, as well as the conduct of nuclear explosions. It allows individual States parties to determine the regulations concerning the transit of nuclear weapons in their airspace and coastal waters. Also, as a condition for nuclear exports, the exporting State party must ensure that the recipient State accepts the safeguards administered by the International Atomic Energy Agency (IAEA). Verification of compliance is to be carried out by the IAEA. States parties must accept IAEA's safeguard measures. Discussion of compliance and other treaty-related matters can take place in the South Pacific Forum. With the authorization of two thirds of the States parties, the South Pacific Forum can also conduct on-site inspections. Three protocols regarding non-regional States are attached to the Treaty. Protocol I calls on all countries possessing territories in the South Pacific to apply the Treaty's provisions prohibiting nuclear weapons to those territories. Protocol II calls on the declared nuclear-weapon States (NWS) not to use or threaten to use nuclear weapons against the parties to the Treaty or the territories of other countries covered by Protocol I. Protocol III forbids NWS from conducting nuclear explosion tests anywhere within the Treaty's area of application.

1987: Convention on the Physical Protection of Nuclear Material and Nuclear Facilities

Multilateral convention requiring parties to protect at agreed levels nuclear materials used for peaceful purposes while in international transport. Nuclear materials used for peaceful purposes are defined as plutonium, uranium-235, uranium-233, and irradiated fuel. States parties are

prohibited from exporting, importing, or allowing the transit through their territory of nuclear materials unless they have received assurances that these will be protected as required by the Convention. States parties are to also inform other States parties in the event of theft, robbery, or misuse of nuclear materials. The 2016 Amendment extends the scope of the original treaty to cover physical protection of nuclear facilities and nuclear material used for peaceful purposes in domestic use, storage and transport. It also adds criminal offenses related to illicit trafficking and sabotage of nuclear material or a nuclear facility, as well as provides for strengthened international co-operation.

1988: Intermediate-Range Nuclear Forces (INF) Treaty (Treaty between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles)

Treaty between the Soviet Union and the United States requiring the destruction of all Soviet and American ground-launched ballistic missiles and cruise missiles with ranges between 500 and 1,000 kilometres and those with ranges between 1,000 and 5,500 kilometres. It also banned the flight testing, modernization and production of such missiles. Verification of compliance with treaty provisions was assured through a comprehensive regime of cooperative measures and on-site inspections. The Special Verification Commission (SVC) provided a forum for discussion of implementation and compliance-related issues.

1990: Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC)

Implementation body established to administer the Common System of Accounting and Control of Nuclear Materials (SCCC) agreed to by Argentina and Brazil in 1990 for the purpose of verifying that the nuclear materials of the two parties are being used exclusively for peaceful purposes. The ABACC collects information from the two parties on matters such as nuclear facilities design, nuclear materials inventories and changes therein, and transfers of nuclear materials out of or between facilities. Additionally it conducts on-site inspections.

1994: Agreed Framework between the United States of America and the Democratic People's Republic of Korea

Agreement concluded between North Korea and the United States aimed at stemming nuclear proliferation on the Korean peninsula by ensuring that North Korea remained a party to the Non-Proliferation Treaty (NPT). On 12 March 1993 North Korea announced its intention to withdraw from the NPT. To preclude this, the United States brokered an accord whereby North Korea agreed to freeze and eventually dismantle its graphite-moderated nuclear reactors under the supervision of the International Atomic Energy Agency (IAEA) as well as to send its spent reactor fuel for disposal outside the country in exchange for two light-water reactors to be built

by 2003 and, pending completion of the first reactor, an annual supply of 500,000 tons of heavy fuel to be provided by an international consortium called the Korean Peninsula Energy Development Organization (KEDO).

1995: Treaty of Bangkok (Treaty on the South-East Asian Nuclear-Weapon-Free Zone)

Multilateral treaty establishing a nuclear-weapon-free zone (NWFZ) in South-East Asia. The Treaty prohibits States parties from developing, manufacturing, testing, acquiring, possessing, or controlling nuclear weapons, and from allowing the use of their territories by other States for any one of these purposes. States parties are also required to conclude individual agreements with the IAEA concerning the application of full-scope safeguards. The Treaty's area of application includes the territory and airspace of the ten members of the Association of South-East Asian Nations (ASEAN) as well as their internal, territorial, and archipelagic waters and exclusive economic zones. Verification of compliance is carried out by the IAEA. To help with the implementation of the Treaty, the Commission for the South-East Asia Nuclear Weapon Free Zone has been established. Disputes regarding implementation may be referred to the International Court of Justice, and non-compliance may ultimately be referred to the United Nations.

1996: Treaty of Pelindaba (African Nuclear-Weapon-Free Zone Treaty)

Multilateral treaty establishing a nuclear-weapon-free zone (NWFZ) in Africa, prohibiting the manufacture, stockpiling, acquisition, possession, control, or stationing of nuclear weapons on the territory of States parties. It also bans the research and development of nuclear weapons as well as the conduct of peaceful nuclear explosions. Any attack against nuclear installations in the Treaty's area of application by States parties is also prohibited, and States parties operating nuclear facilities are required to maintain the highest standards of physical protection of nuclear material, facilities and equipment. The Treaty allows each party to decide for itself whether it allows the transit of nuclear weapons on its territory. Verification of compliance is provided by the IAEA, which administers safeguard measures to all the parties, in cooperation with the African Commission on Nuclear Energy (AFCONE). Inspections triggered by the complaints procedure can be conducted by the IAEA at the request of the AFCONE. Three protocols are attached to ensure the respect of the NWFZ by non-States parties. Protocol I calls upon the declared nuclear-weapon States (NWS) not to use or threaten to use nuclear weapons against any Treaty member or territory of a party to Protocol III that is situated within the zone. Protocol II calls upon the declared NWS to not test or encourage the testing of nuclear explosives anywhere within the Treaty's area of application. Protocol III concerns States with dependent territories in the zone and requires them to observe specific denuclearization provisions of the Treaty and to ensure IAEA safeguards with respect to these territories.

2004: United Nations Security Council Resolution 1540

UN Security Council resolution deciding that all States shall refrain from providing any form of support to non-State actors that attempt to develop, acquire, manufacture, possess, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery, in particular for terrorist purposes. The resolution requires all States to adopt and enforce appropriate laws to this effect as well as other effective measures to prevent the proliferation of these weapons and their means of delivery to non-State actors, in particular for terrorist purposes. Voluntary reporting of progress in implementation is coordinated by the 'Security Council Committee established pursuant to resolution 1540' (1540 Committee).

2006: Treaty of Semipalatinsk (Central Asian Nuclear-Weapon-Free Zone Treaty)

Multilateral treaty establishing a nuclear-weapon-free zone (NWFZ) in Central Asia. Under the treaty, Central Asian states prohibits States Parties to research, develop, manufacture, stockpile, acquire, possess, or have any control over any nuclear weapon or other nuclear explosive device; to seek or receive assistance in any of the above; and to assist in or encourage such actions. The receipt, storage, stockpiling, installation, or other form of possession of any nuclear weapon or nuclear explosive device on the territory of the member states is not allowed. Each party pledges not to carry out nuclear weapon tests or any other nuclear explosion and prevent any such nuclear explosion at any place under its control. Member states agree to conclude with the IAEA and enforce a Safeguards Agreement and Additional Protocol. Parties must also introduce export controls wherein they will not provide source or any special fissionable material or related equipment to any non-nuclear weapon state (NNWS) that has not concluded an IAEA Comprehensive Safeguards Agreement and Additional Protocol. Further, the States Parties agree to maintain physical protection of nuclear material, facilities, and equipment.

2015: Joint Comprehensive Plan of Action (JCPOA)

Multilateral agreement to ensure confidence in the non-proliferation commitments by Iran in NPT context. In the JCPOA Iran agrees to give up most of its stockpile of highly enriched uranium, to restrict its uranium enrichment and nuclear research activities, and to allow the IAEA to monitor its nuclear facilities with less limitations than before. In exchange, the other parties agree to reduce the international sanctions against Iran.

2021: Treaty on the Prohibition of Nuclear Weapons (TPNW)

The Treaty includes a comprehensive set of prohibitions on participating in any nuclear weapon activities. These include undertakings not to develop, test, produce, acquire, possess, stockpile, use or threaten to use nuclear weapons. The Treaty also prohibits the deployment of nuclear weapons on national territory and the provision of assistance to any State in the conduct of prohibited activities. States parties will be obliged to prevent and suppress any activity prohibited under the TPNW undertaken by persons or on territory under its jurisdiction or control. The

Treaty also obliges States parties to provide adequate assistance to individuals affected by the use or testing of nuclear weapons, as well as to take necessary and appropriate measure of environmental remediation in areas under its jurisdiction or control contaminated as a result of activities related to the testing or use of nuclear weapons.

(--): Comprehensive Nuclear-Test-Ban Treaty (CTBT)

Under the CTBT States Parties undertake not to carry out nuclear weapon test explosions or any other nuclear explosion, and to refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion. The CTBT also provides for a comprehensive verification regime including the establishment of an International Monitoring System (IMS), on-site inspections, and confidence- and security-building measures (CSBMs). The CTBT also would establish a Comprehensive Nuclear Test Ban Treaty Organization (CTBTO) to implement the Treaty's provisions and to administer compliance with these provisions. Although the IMS is already functioning and the CTBTO Preparatory Commission carries out the functions of the CTBTO, the Treaty has not yet entered into force.

Factsheet II: Examples of *non-binding* measures contributing to nuclear risk reduction, sorted by date of entry into force

In general: Publication of nuclear policy documents

Unilateral decisions by various nuclear weapon possessor states to publish nuclear policy documents such as doctrines and postures; such transparency measures may be helpful in preventing miscommunications and misunderstandings which could in turn lead to inadvertent nuclear conflict.

1963 etc.: Various bilateral agreements on emergency communication mechanisms

Starting with the first Hotline Agreement by the Soviet Union and the United States in 1963, several bilateral agreements were signed between various nuclear weapon possessor states (and a few between a nuclear weapons possessor state and a non-nuclear weapons possessor state) regarding emergency communication mechanisms, often called 'hot lines' or Direct Communications Links (DCLs). Such permanent communication links, generally between heads of States or between military Points of Contact, can be used used in emergency situations when other consultative mechanisms appear to be either insufficient or unavailable, thus preventing miscommunications or misunderstandings which in turn might lead to inadvertent (nuclear) escalation.

1964: Declaration of No First Use policy by China

Statement by China to never be the first to use nuclear weapons in a conflict, reserving them strictly to retaliate in the aftermath of a nuclear attack against its territory.

1971: Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War

Agreement between the Soviet Union and the United States obliging each party to take the necessary measures to improve its organizational and technical safeguards against the unauthorized or accidental use of nuclear weapons. In addition, both parties agreed to make arrangements for immediate notification should the risk of a nuclear war arise from the unauthorized or accidental use of nuclear weapons. Finally, both parties were to notify each other in advance of any planned missile test launch beyond the territory of the launching party and in the direction of the other party.

1973: Agreement on the Prevention of Nuclear War

Agreement between the Soviet Union and the United States which obliged the parties to act in such a manner as to prevent the exacerbation of their relations, as to avoid military confrontations, and as to exclude the outbreak of nuclear war between them and between either of the parties and other countries. Each party committed to refrain from the threat or use of force against the other, against the allies of the other, or against other countries in situations which may endanger international peace and security. If a situation involving the risk of nuclear war is to occur, the parties were to consult immediately with one another and to make every effort to avert this risk.

1976: Agreement between France and the Union of Soviet Socialist Republics on the Prevention of the Accidental or Unauthorized Use of Nuclear Weapons

Agreement calling on each party to maintain and possibly improve its organizational and technical safeguards to prevent the accidental or unauthorized use of nuclear weapons under its control. In addition, the parties committed to notify each other immediately of any accidental or otherwise unexplained or unauthorized explosion of one of their nuclear weapons whose effects could be construed as likely to be harmful to the other.

1977: Agreement between the United Kingdom and the Union of Soviet Socialist Republics on the Prevention of The Accidental or Unauthorized Use of Nuclear Weapons

Agreement required each party to maintain and to improve its organizational and technical safeguards to prevent the accidental or unauthorized use of nuclear weapons under its control. In addition, the parties undertake to notify each other immediately of any accidental or otherwise unexplained or unauthorized incident which could lead to the explosion of one of their nuclear weapons or could otherwise create the risk of outbreak of nuclear war.

1985: Gorbachev-Reagan Statement

Bilateral statement by the States Leaders of the Soviet Union and the United States that ‘a nuclear war cannot be won and must never be fought’, thus reaffirming their position that nuclear war should be prevented at all time.

1987: Agreement between the United States of America and the Union of Soviet Socialist Republics on the Establishment of Nuclear Risk Reduction Centers

Agreement between the Soviet Union and the United States which requires each party to establish in its capital a Nuclear Risk Reduction Center aimed at avoiding any accidental nuclear war. The Centers are to exchange notifications of ballistic missile launches and other relevant information.

1987: Missile Technology Control Regime (MTCR)

Informal political arrangement to control the proliferation of rocket and unmanned air vehicle systems and components thereof capable of delivering weapons of mass destruction. The MTCR is not a treaty, but a regime, establishing a set of export control Guidelines which each participating country implements according to its own national legislation. MTCR Guidelines address delivery systems for all types of WMD, and are applicable to such rocket and unmanned air vehicle systems as ballistic missiles, space launch vehicles, sounding rockets, unmanned air vehicles, cruise missiles, drones, and remotely piloted vehicles.

1988: Agreement between the United States of America and the Union of Soviet Socialist Republics on Notifications of Launches of Intercontinental Ballistic Missiles and Submarine-Launched Ballistic Missiles

Agreement between the Soviet Union and the United States requiring each party to notify, no less than 24 hours in advance of the planned date, the launch area and the area of impact for any test launch of a strategic ballistic missile.

1988: Agreement on the Prohibition of Attacks against Nuclear Facilities

Agreement between India and Pakistan whereby each party pledges not to attack the nuclear installations of the other. Its aim is to allay mutual fears of and thereby ease pressures for pre-emptive strikes by each side against the other's nuclear complexes, especially in time of crisis. The Agreement also requires both parties to exchange complete lists of their nuclear installations.

1989: South African decision to eliminate its nuclear weapons

Decision by South Africa to completely dismantle its nuclear weapons arsenal and related facilities and to enter the NPT as a non-nuclear weapon state (NNWS).

1991: Presidential Nuclear Initiatives (PNIs)

Reciprocal unilateral pledges by the United States and Russia to reduce the numbers of certain categories of deployed tactical nuclear weapons and to withdraw them from third countries.

1991: Cooperative Threat Reduction Program

Initiative of the United States, providing funding and expertise for either the elimination of Soviet nuclear weapons or their removal to carefully guarded sites, for storage of nuclear material obtained from decommissioned missiles, and for efforts to prevent the sale or illegal dispersal of destructive weapons. In addition, it provided funding to improve communications between US and Russian militaries, to convert Russian defence industries into peaceful civilian industries, to ensure the environmental safety of former nuclear sites, and to provide new employment for former Russian nuclear scientists and other military personnel.

1992: Lisbon Protocol

Multilateral agreement recognizing Belarus, Kazakhstan, Russia and Ukraine as successor States in relation to the START I Treaty after the dissolution of the Soviet Union. Under the Protocol, Belarus, Kazakhstan and Ukraine also pledge to eliminate all nuclear weapons on their territory and to join the Non-Proliferation Treaty (NPT) as non-nuclear-weapon States.

1994: Moscow Declaration

Agreement between Russia and the United States not to target strategic nuclear missiles at each other. De-targeted missiles are reprogrammed to either have no target or, in the case of missiles that require a constant target, are set to open-ocean targets.

1998: Declaration of No First Use policy by India

Statement by India not to be the first to use nuclear weapons in a conflict, reserving them strictly to retaliate in the aftermath of a nuclear attack against its territory.

1999: Lahore Declaration

Agreement between India and Pakistan aimed at avoiding the outbreak of a nuclear conflict through accidental or unauthorised use of nuclear weapons. The agreement requires both parties to implement nuclear safeguards, to enhance bilateral dialogue, and to give each other advance notification of ballistic missile flight tests as well as notification of accidental or unexplained use of nuclear weapons.

2002: International Code of Conduct against Ballistic Missile Proliferation (ICOC, or The Hague Code of Conduct)

Agreement initially developed by the members of the Missile Technology Control Regime (MTCR), with a view to becoming universalised through an ad hoc process separate from the MTCR and open to all States. The ICOC is an arrangement to promote the prevention and

curbing of the proliferation of ballistic missiles capable of delivering weapons of mass destruction, to develop relevant norms, and to promote confidence regarding missile and space launch vehicle activities. The ICOC subscribing States agree not to assist ballistic missile programmes in States which might be developing or acquiring weapons of mass destruction. They also resolve to implement transparency and confidence-building measures (CBM) including pre-launch notifications of ballistic missiles and space launch vehicles, and the submission of annual declarations regarding their national ballistic missile and space launch vehicle policies.

2005: Agreement on Pre-Notification of Flight Testing of Ballistic Missiles

Agreement between India and Pakistan requiring both parties to give each other advance notification of ballistic missile flight tests to prevent the outbreak of nuclear conflict because of misunderstandings. The agreement states that pre-notification applies only to tests conducted with surface-to-surface ballistic missiles launched from land or sea. The agreement does not apply to cruise missiles and surface-to-air missiles.

2006: Global Initiative to Combat Nuclear Terrorism (GICNT)

Multilateral partnership committed to strengthening global capacity to prevent, detect, and respond to nuclear terrorism. The GICNT works toward this goal by conducting multilateral activities that strengthen the plans, policies, procedures, and interoperability of partner nations. All partner nations voluntarily commit to implementing the GICNT Statement of Principles (SOP), a set of broad nuclear security goals encompassing a range of deterrence, prevention, detection, and response objectives.

2007: Agreement on Reducing the Risk from Accidents Relating to Nuclear Weapons

Agreement between India and Pakistan requiring both parties to maintain and improve national measures, including organizational and technical arrangements, to prevent accidents with nuclear weapons. The Parties shall notify each other immediately in the event of any accident relating to nuclear weapons which could create the risk of an outbreak of a nuclear war.

2010-2016: Nuclear Security Summits (NSS)

US-led multilateral initiative with the aim to improve worldwide nuclear security by enhancing cooperation and to make concrete agreements regarding better securing nuclear materials and facilities. The results were set down in the form of concrete plans and action points, containing commitments and declarations of intent from the participating countries.

Factsheet III: Examples of *forums for dialogue* contributing to nuclear risk reduction, sorted by starting date

1946: United Nations General Assembly First Committee (Disarmament and International Security Committee)

One of six main committees of the United Nations General Assembly (UNGA). It deals with all issues relating to disarmament and international security of interest to the UNGA, and makes recommendations in the form of draft resolutions to be taken up by the UNGA while in plenary session. It is composed of all members of the UNGA and meets annually at the United Nations Headquarters in New York.

1969: Conference On Disarmament (CD)

Multilateral negotiating forum on arms control and disarmament issues, mandated to negotiate arms control and disarmament measures in any major area of interest to the international community. In practice, the CD adopts a specific work programme focusing on a limited number of issues selected at the beginning of each annual session. Items in the CD work programme are taken up in formal and informal plenary meetings of the Conference. However, the CD may also establish subsidiary bodies in the form of ad hoc committees, working groups, technical groups, or groups of governmental experts. These bodies can be given either negotiating or non-negotiating mandates. Decisions in the CD are carried out on the basis of consensus.

2009: P5 Process

The P5 Process is a dedicated forum bringing together the five nuclear weapon states (NWS) recognised by the Nuclear Non-Proliferation Treaty (NPT): China, France, Russia, the United Kingdom and the United States. The forum is meant to discuss their unique responsibilities under the NPT.

2014: International Partnership for Nuclear Disarmament Verification (IPNDV)

US-led multilateral initiative in which participating states identify challenges associated with nuclear disarmament verification and work on developing potential procedures and technologies to address those challenges.

2019: Stockholm Initiative for Nuclear Disarmament

Multilateral initiative led by Sweden, aimed at developing an implementation strategy for the so-called ‘step-by-step’ approach to nuclear disarmament that breaks down stalled major goals into smaller, more manageable stepping stones.

2019: Creating an Environment for Nuclear Disarmament (CEND)

Multilateral forum aimed at enhancing in-depth dialogue between participating states on security issues related to nuclear weapons, thus identifying conditions that may contribute to nuclear disarmament.

5. Synthesis Paper on relevant experiences in the conventional field

There have been a considerable number of efforts and initiatives on risk reduction in the conventional field on a regional level[14]. They were most developed in the Euro-Atlantic area and Asia and Pacific Ocean region, notably in the framework of the CSCE/OSCE Process[15] and the Shanghai Process[16]. However, there are as well a great number of efforts and initiatives in other regions, namely the Antarctica, Asia, Latin-America, and the Middle East[17].

It is noteworthy that risk reduction measures in the conventional field cover the entire spectrum ranging from efforts to develop a set of politically binding confidence and security building measures (e.g. in Latin America) on the one hand to legally binding treaties with a prohibition to station any kind of weapons in certain regions (e.g. Antarctica Treaty).

Experiences with these efforts and initiatives in the conventional field allow could as well allow to draw conclusions for nuclear risk reduction measures. In particular they could serve as a generic "toolbox" of instruments to be drawn upon, as appropriate.

Generally, risk reduction measures in the conventional field can be characterized, inter alia, by the following paradigms, which in turn can be seen as well as a condition for effectiveness and efficiency:

- enhanced security at lower level of armament in general or certain regions,
- cooperative approach to security and
- transparency and verification to create trust and confidence in the implementation of relevant provisions

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[14] At the global level an example for risk reduction mechanism can be seen in the United Nations Register of Conventional Weapons, which is intended to increase transparency in the international transfer and national production and procurement of major conventional arms. States should submit voluntarily annual data on the number imported and exported battle tanks, armored combat vehicles, large calibre artillery systems, combat aircraft, attack helicopters, warships, and missile systems. No verification

provisions are provided for.

[15] See attached fact sheets for more details on the Conventional Forces Treaty in Europe (CFE), the Vienna Document 2011, the Open-Skies Treaty, the Forum for Security Co-Operation.

[16] See attached fact sheet on

- the Agreement on Confidence Building in the Military Field in the Border Area between the Russian Federation, the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan and the People's Republic of China of April 26, 1996 and

- The Agreement on Mutual Reductions of Armed Forces in the Border Area between the People's Republic of China, the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation and the Republic of Tajikistan of April 24, 1997.

Both Agreements are referred to in the Charter of the Shanghai Cooperation Organization as having made an important contribution to the maintenance of peace, security and stability in the region and in the world.

[17] See attached fact sheet, giving an overview on these regional efforts and initiatives.

With the benefit of historical hindsight, it can be retained that effectiveness and efficiency of these risk reduction measures in the conventional field depends on or will be enhanced in particular:

- the political will to implement provisions in times of tensions/deteriorating conditions,
- dynamic adaptation of provisions to reflect changing security environment as well new technologies,
- the reduction of conventional military capabilities to a degree that no, very limited or only defensive military operation could be envisaged,
- ensuring the military transparency required to make it possible to predict relevant military activities and
- the existence of an interlocking web of mutually re-enforcing agreements[18].

In line with the categories for risk reduction measures, as discussed under Item 1 "General Considerations", the following generic risk reduction measures[19] in the conventional field can be retained[20]:

Policy-doctrinal measures

- Commitment to the principles and norms as laid out by the Charter of the United Nations and the Organization for Security and Cooperation in Europe (OSCE), such as the recognition of state sovereignty, political independence, territorial integrity and the inviolability of borders and states' right to choose their alliances freely.
- Reaffirmation that parties do not consider each other as adversaries.
- Commitment not to employ force or the threat of force against the other party or parties.
- Commitment to peaceful conflict resolution through negotiations.
- Commitment to a cooperative approach to security;
- Commitment to establish a balance of relevant forces and not to seek unilateral military superiority.
- Information exchange on defense policy, defence and armed forces planning, budgets, procurements.

Strategic measures

- Prohibition of the stationing or testing of certain weapons in the specified areas.
- Prohibition on the presence/stationing of certain weapon systems or weapons at all (demilitarized zone) in certain areas/ defined border regions.
- Reduction of conventional forces to a level which eliminates the capability for large scale conventional offensives.

[18] e.g. see above mentioned conventional arms control and disarmament agreements in Euro-Atlantic area and Asia and Pacific Ocean region.

[19] Specific risk reduction measures naturally depend on the concrete context. For further details see the attached fact sheets.

[20] These risk reduction measures do overlap to a certain degree and are an abstract of efforts and initiatives on risk reduction in the conventional field.

- Reduction of forces to ceilings compatible with the principle of mutual and equal security.
- Regional sublimits on the presence of military personnel and on the number of certain weapons categories, in particular, in border regions

Operational measures
- Transparency to eliminate the capability to launch surprise attacks.
- Prohibition of carrying out military exercises above a certain threshold in border areas.
- Measures to prevent hazardous military activity.

Confidence and security building measures
- Notifications and detailed exchange of information on relevant conventional weapons, personnel strength and their locations; transparency on command structure.
- Information exchange on calendars, in particular planned manoeuvres subject to observation
- Notification and observation of military activities, in particular when exceeding a certain threshold or in specified areas/border areas.
- Limits on the scale, geographical scope and number of military exercises.
- No military exercises directed against the other Party
- Mandatory observation of military activities exceeding a certain threshold.
- Verification measures in order to check the information provided and compliance with the provisions, including mandatory on-site inspections, challenge inspections.
- complementary verification measures such as national and multinational technical means of verification, including certified sensors.
- Verification by a third party, e.g. the United Nations or a joint commission
- Cooperative verification measures with the participation of both the inspecting end inspected party
- Sharing of verification results with other states parties
- Military confidence-building through contacts, visits to military installation and demonstrations of new major weapon systems or equipment, and facilitating contacts
- Commitment to participate in the United Nations Register of Conventional Arms

Crisis and conflict prevention and management measures
- Commitment to a comprehensive security dialogue and consultations on reducing conflict risks.
- Commitment to launch conflict management mechanisms upon request.
- Mechanisms to make inquiries about unclear situations.
- Right to obtain timely and adequate clarifications from one another in the event of doubtful situations.
- Consultations mechanisms to consider and decide issues of implementation - including resolution of ambiguities and differences in interpretation, settle disputes, claims of non-compliance and of measures to enhance the viability and effectiveness.
- Joint review mechanism to oversee the implementation of provisions.
- Commitment to undertake joint investigations of alleged non-compliance.

- Commitment to refer disputes, that cannot be settled through talks, mediation or arbitration, to the International Court of Justice.
- Dedicated communications networks/ hot-lines to provide for a secure and reliable infrastructure for the exchange of relevant information between national military/ political authorities.
- Mechanisms for consultations and co-operation as regards unusual military activities, cooperation as regards hazardous incidents of a military nature.

Fact Sheet 1

Treaty on Conventional Armed Forces in Europe (CFE)[21]

The CFE Treaty was concluded in 1990 between the then member states of NATO and the Warsaw Pact[22] and was intended

- to replace military confrontation with a new pattern of security relations among all States Parties,
- to create a secure and stable balance of conventional armed forces at lower levels and
- to eliminate the capability to launch surprise attacks or large-scale offensives in Europe[23].

The CFE Treaty together with the Vienna Document 2011 and the Treaty on Open Skies are part of an interlocking web of mutually re-enforcing agreements, which form the current conventional arms control framework in the Euro-Atlantic area.

Main Treaty Provisions[24]

- Overall Limits for each of the two groups of States Parties holdings of major weapons systems[25] in five given categories, i.e. battle tanks (each 20.000), armoured combat vehicles (each 30.000), artillery systems (each 20.000), combat aircraft (each 6.800) and

[21] For the text of the Treaty see: https://www.osce.org/files/f/documents/4/9/14087.pdf

[22] The Treaty covers the entire land territory of the States Parties in Europe from the Atlantic Ocean to the Ural Mountains.

[23] The Treaty is complemented by "The Concluding Act of the Negotiation on Personnel Strength of Conventional Armed Forces in Europe" (CFE 1a) of July 1992, resulting in the substantial reduction of armed forces and since 2001, over 700,000 troops have been withdrawn. Presently there are less than three million troops in the area of application with an authorized ceiling of over 5.7 million

[24] The States Parties agreed on an Adapted CFE Treaty (A-CFE) in 1999 with the intention of bringing the treaty in line with changes to the security-policy environment in Europe, by establishing specific national and territorial ceilings of TLE and an enhanced transparency and verification regime. However, the adapted treaty has yet to enter into force due to disagreement over the presence of Russian troops in Moldova and Georgia.

Russia suspended its implementation of the CFE Treaty in December 2007, stating that the treaty currently in force no longer reflected Russian security needs. However, Russia still remains a CFE State Party. The NATO State Parties as well as Moldova and Georgia also ceased to implement the treaty as it relates to Russia at the end of 2011. Ukraine also took this step at the beginning of April 2015.

[25]Member states of each group then divided their respective limits of "Treaty Limited Equipment (TLE) among themselves, thus creating national limits, with no single state being allowed more than a third of the TLE total. The Tashkent Agreement of 1992 redistributed the former USSR's equipment and strength targets among the signatories.

attack helicopters (each 2.000)[26], resulting in the reduction or destruction of about 60,000 pieces of Treaty Limited Equipment (TLE) since 1992.

- Sublimits were established in regionally differentiated areas, capping the deployment of land based TLE in four concentric zones in order to prevent destabilizing force concentrations in Europe. As a further stabilizing measure, the Treaty placed specific limits on the number of land based TLE for Europe's southern and northern flank in order to substantially reduce the possibility of an encircling maneuver. [27]
- Notifications and annual exchange of detailed information about the command structure of the conventional forces as well as relevant holdings of TLE and their locations in order to establish the transparency required to ensure verification of compliance with the provisions of the Treaty.
- Verification regime allowing for a large number of different types of mandatory on-site inspection according to proportionate quotas (including the important option of challenge inspections) to verify States Parties' compliance with the Treaty's limitations and other requirements. In total over 4000 intrusive on-site inspections have been carried out. In addition, the States Parties are entitled to use national and multinational technical means of verification (NTM and MTM).
- Joint Consultative Group (JCG)[28] considers disputes arising out of the implementation of this Treaty and is the body to which claims of non-compliance may be addressed. In this context, the group's tasks include resolution of ambiguities and differences in interpretation, consideration of measures to enhance the viability and effectiveness of the Treaty, resolution of technical matters, and consideration of disputes arising out of the implementation of the Treaty. The Joint Consultative Group, established by the Treaty,
- The OSCE Communications Network provides a secure and reliable infrastructure for the exchange of relevant information under the CFE Treaty, complementing traditional diplomatic channels.

[26] Due to continued voluntary reductions, currently holdings within the area of application are well under authorized ceilings: under 25,000 battle tanks, under 45,000 armoured combat vehicles, under 29,000 artillery systems, well under 8,000 combat aircraft and under 2,000 attack helicopters.

[27] The CFE Treaty was supplemented with a so-called flank agreement in 1996 in order to allow Russia and Ukraine greater room for manoeuvre in locating their conventional armed forces in specifically designated regions.

[28] Russia suspended its participation in the Joint Consultative Group of the CFE Treaty in March 2015.

Fact Sheet 2

Vienna Document 2011 on Confidence-and Security-Building Measures[29]

The Vienna Document is a key politically binding instrument of confidence-building between the 57 OSCE participating States and is currently the most comprehensive agreement to strengthen confidence and security in Europe[30]. Based on the Helsinki Final Act of 1975 and first signed in 1990, it was last updated in 2011[31].

Lack of knowledge and information regarding the activities of the armed forces, such as transfers, extensive maneuvers and military exercises, can lead to misunderstandings and incorrect assessments of the situation in other countries. As a result, crises and even military conflicts can develop.

Therefore, the Vienna Document is intended to provide, in particular, military transparency and make it possible to predict military activities and units of troops in Europe, thus making an important contribution to building confidence between the participating States.

Main Provisions

- Annual exchange of detailed military information on command organization, location, personnel strength, and major conventional weapon and equipment systems of formations and combat units of land forces, air forces, air defence aviation and of naval aviation permanently based on land
- Information exchanging on defense policy, defence and armed forces planning, budgets, procurements, and calendars, in particular planned manoeuvres subject to observation.
- Prior notification and observation of military activities, exceeding the engagement of more than 9,000 troops and or, 250 tanks, 500 ACVs, or 250 pieces of artillery.
- Mandatory observation of military activities exceeding the engagement of more than 13,000 troops and or 300 tanks, 500 ACVs, or 250 pieces of artillery
- Verification measures in order to check the information provided and compliance with the provisions of the Vienna Document by all participating States
- Inspections in "specified areas" in order to check whether military activities are taking place in this area and what purpose they serve. [32]..

[29] For the text of the document see: https://www.osce.org/files/f/documents/a/4/86597.pdf

[30] OSCE's zone of application includes the territory, surrounding sea areas, and air space of all European (Russia from the western border to the Ural Mountains) and Central Asian participating States.

[31] It was updated three times in 1992, 1994 and 1999. Proposals to adapt the Vienna Document 2011 to the changing security environment are under discussion in the OSCE Forum for Security Cooperation.

[32] Each participating state has to accept annually three inspections. The inspection team may inspect the area on the ground and from the air. Furthermore, a proportionate number of evaluations of units (1 evaluation per 60 units) at their normal peacetime

- risk reduction measures (mechanisms for consultations and co-operation as regards unusual military activities, cooperation as regards hazardous incidents of a military nature);
- Military confidence-building through regularly contacts, visits to air bases and demonstrations of new major weapon systems or equipment, and facilitating contacts (e.g., joint trainings, academic exchanges, etc.) between members of the armed forces.
- Risk reduction and conflict prevention, in particular a mechanism for consultation and cooperation, through notifications and meetings, regarding unusual military activities.
- Review of present and future implementation of agreed CSBMs in an Annual Implementation Assessment Meeting (AIAM).

In addition, the Vienna Document encourages the participating states to agree additional confidence-building measures in accordance with the basic OSCE principles, such as

- joint training courses and manoeuvres;
- intensification of military contacts and co-operation, particularly in border areas;
- establishment of cross-border communications networks;
- reduction of the thresholds for military activities, in particular with regard to border areas;
- reduction of the thresholds for notifications and observations of certain military activities that a State is allowed to carry out in a given period, particularly in border areas;
- agreement on additional inspection and evaluation visits by neighboring States, especially in border areas;
- increase in the size of evaluation teams and agreement to multinational evaluation teams;
- creation of bi-national or regional verification agencies to co-ordinate “out of the region” verification activities

location can be conducted in order to check on the ground the numbers of troops and amount of military material reported in the exchange of information.

Fact Sheet 3

Treaty on Open Skies[33]

The Treaty on Open Skies entered into force as a legally binding document on 1 January 2002[34]. The Treaty currently has 34 States Parties[35] in the Euro-Atlantic area, stretching from Vancouver to Vladivostok. It was

- designed as a confidence and security building measure,
- intended as well as an instrument to monitor compliance with other arms control agreements (in particular the Treaty on Conventional Armed Forces in Europe and the Vienna Document) and
- thus strengthening conflict-prevention and crisis management capabilities in the area.

The Treaty on Open Skies together with the CFE Treaty and Vienna Document 2011 are part of an interlocking web of mutually re-enforcing agreements, which form the current conventional arms control framework in the Euro-Atlantic area.

Main Treaty Provisions

- each State Party has the right to conduct a certain number of unhindered observation flights, agreed annually, in the airspace of the other States Parties[36].
- use of sensors (with certain restrictions) for photography, radar and, as of 2006, infrared imagery, to observe from the air. Digital sensing equipment has been introduced gradually since 2013.
- both the observing and observed parties are involved in the conduct of the observation flights
- aerial observation in other fields expressly allowed. "Open Skies" observation flights can thus also be used to obtain a picture of the situation in international crises as well as for environment monitoring.
- Open Skies Consultative Commission (OSCC) as the primary consulting and decision-making body for issues of Open Skies implementation.
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[33] For the text of the document see: https://www.osce.org/files/f/documents/1/5/14127.pdf

[34] The Treaty was signed on 24 March 1992 by the then members of NATO and the former Warsaw Pact.

[35] The United States officially notified its intent to withdraw from the Treaty by 22 November 2020, stating that Russian noncompliance with the Treaty as making continued U.S. participation untenable.

[36] As specified by the Treaty, State Parties are obligated to accept a set number of observation flights (e.g. Russia and Belarus–42, United States–42, Canada–12, France–12, Germany–12, Italy–12, Turkey–12, Ukraine–12, the United Kingdom–12)

The OS Treaty is a cooperative air observation regime. In this vein observation missions are usually planned and carried out by multinational observation teams. During the observation flights both representatives of the observing and the observed State Parties are present on board of the observation aircraft.
All national aircraft intended for air observation missions must pass a certification process in which all States Parties may participate. The film and photo material obtained during an observation flight can be purchased by all other States Parties.

Fact Sheet 4

Agreement on

Strengthening Confidence in the Military Field in the Border Area

between the People's Republic of China, the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation and the Republic of Tajikistan of April 26, 1996[37]

The Agreement foresees confidence and security building measures in order to strengthen security and for the preservation of tranquility and stability in the border area between the Russian Federation, Kazakhstan, Kyrgyzstan and Tajikistan, on the one hand, and China, on the other as an important contribution to the maintenance of peace in the Asia and Pacific Ocean region

Main Provisions

- the area of application is a 100-kilometer zone on both sides of the respective borders with China (a total of 7.000 kilometers).
- Exchange of information in the area of application regarding the size of the personnel and the number of basic types of weapons and military equipment of the ground troops, air forces, air-defense air forces and border troops
- no military exercises directed against the other Party
- limits on the scale, geographical scope and number of military exercises[38];
- detailed notification of any large-scale military activity and troop movements resulting from emergency situations[39]
- observation of major military exercises, on a reciprocal basis;
- limitations and notifications for temporary entry of river-going combat vessels of navies or naval forces into the 100-kilometre geographical zone on both sides of the eastern part of the Russian-Chinese border;
- measures to prevent hazardous military activity;
- inquiries about unclear situations;
- contacts between military personnel of the armed forces and the border troops

[37] For the text of the agreement see: UNGA Document A/51/137

[38] In particular, no exercises with more than 40.000 participants on the eastern part of the Russian-Chinese border; and no exercises with more than 4.000 participants or 50 battle tanks on the western part of of the Russian-Chinese border and on the border of Kazakhstan, Kyrgyzstan, Tajikistan with China

[39] In particular for military exercises involving more than 25,000 participants or when more than 9,000 troops, accompanied by more than 250 battle tanks are temporarily introduced. Notifications shall include information on the total number of personnel taking part; the number of military units at the strength of a regiment or larger taking part; the number of battle tanks, armored vehicles, artillery systems of a calibre of 122 mm or greater, military airplanes and helicopters, and tactical missile launchers; and the purposes, timetable and geographical scope of the military activities and the level of command.

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Agreement on
Mutual Reductions of Armed Forces in the Border Area
between the People's Republic of China, the Republic of Kazakhstan, the Kyrgyz Republic, the Russian Federation and the Republic of Tajikistan of April 24, 1997[40],

The Agreement of April 24, 1997 complements the preceding Agreement of April 26,1996 and

- confirms in particular, that none of the parties shall use or threaten to use force against the other party or parties, neither shall they seek unilateral military superiority,
- stipulates that the parties will reduce their military forces in the border areas to the minimum level compatible with their friendly and good-neighborly relations, a level that shall not go beyond their defense needs.
- limits the presence of military personnel in the area of application[41] to 130.400 plus 55.000 border forces on each side of the border
- sets limitations on the number main weapons categories[42], in particular battle tanks, armored combat vehicles, artillery systems, launchers of tactical missiles, combat planes and attack helicopters in the area of application
- contains a detailed notification and verification regime

[40] The Agreement is limited until 31.12.2020; see as well *Collection of the Russian-Chinese Treaties, 1949-1990* (Terra-Sport: Moscow 1999)
[41] 100-kilometer zone on both sides of the respective borders with China
[42] 3.900 battle tanks (of which 3.810 are the Russian quota); 5890 armored combat vehicles; 4540 artillery systems; 96 launchers of tactical missiles; 290 combat planes and 434 attack helicopters in the area of application on each side of the border with China

Fact Sheet 5

Regional Efforts and Initiatives on Risk Reduction in the Conventional Field[43]

Given the great number of regional efforts and initiatives this fact sheet does not aspire to give a comprehensive overview and, in particular not gauge their political viability, effectiveness and efficiency but attempts to identify the salient elements relevant to risk reduction, as contained in the efforts and initiatives.

The Antarctic

The Antarctic Treaty of 1959 prohibits

- the stationing or testing of any kind of weapons including nuclear weapons in the Antarctic,
- military bases or facilities may,
- all actions of a military nature,
- nuclear explosions and the disposal of radioactive waste material

Verification of compliance with the Antarctic Treaty is assured through unlimited on-site and aerial inspections of stations, installations, equipment, ship and aircraft debarkation and embarkation points.

Disputes that cannot be settled through talks, mediation or arbitration, can be referred to the International Court of Justice.

Asia and Pacific Ocean Region

Agreement on Reconciliation, Nonaggression and Exchange and Cooperation between South and North Korea of 1991. The Parties pledged to

- respect each other's sovereignty,
- resolve disputes peacefully,
- avoid accidental armed clashes,
- establish a joint military commission to negotiate confidence- and security-building measures (CSBMs) including arms reductions, constraints on and notification of military exercises, exchanges of personnel and of information, the elimination of weapons of mass destruction (WMD), verification mechanisms, and the installation of a hotline between national military authorities.

Agreement on the Maintenance of Peace and Tranquility along the Line of Actual Control (LAC) in the India-China Border of 1993.The Parties commit to

[43] For further detail see in particular: A Lexicon for Arms Control, Disarmament and Confidence-Building, UNIDIR/2003/22

- not violate the LAC.
- undertake joint investigations of alleged violations,
- keep their military forces along the LAC to a minimum level,
- negotiate reductions in these forces to ceilings compatible with the principle of mutual and equal security,
- negotiate confidence- and security-building measure (CSBM) arrangements with respect to the constraint of certain military activities in mutually agreed zones,
- prior notification of major military exercises,
- establish effective mechanisms for their verification.

Agreement between India and China on Confidence-Building Measures in the Military Field along the Line of Actual Control in the India-China Border Areas of 1996 contains provisions with regard to mutual non-aggression, constraints on military deployments and exercises, exchanges of military data, prior notification, military contacts as well as information and communication measures.

Furthermore, the parties pledge

- to avoid conducting military exercises involving one division or more in close proximity to the LAC,
- not to fly combat aircraft within ten kilometres of the LAC,
- to provide advance notification of exercises close to the LAC involving one brigade or more,
- to refrain from opening fire, using hazardous chemicals or carrying out blast operations within two kilometres of the LAC,
- to notify each other five days in advance if any such activities are to take place;
- commit to maintain and expand military contacts and communications along the LAC,
- initiate medium- and high-level meetings between border authorities and
- recognize each other's right to obtain timely and adequate clarifications from one another in the event of doubtful situations arising with respect to the implementation of the Agreement and more generally, the situation along the LAC.

Inter-Sessional Support Group on Confidence-Building Measures of 1995, established by the ASEAN Regional Forum (ARF- which has a focus on inter-governmental

consultations on regional security matters) with a mandate to foster dialogue on security matters in the region and to study and propose region-wide confidence-building measures. Its recommendations

- exchange of information,
- the voluntary annual release of defence policy statements and of briefings on regional security issues,
- the creation of a multilateral communications network,
- liaison links with other similar regional forums,
- military contacts,
- greater participation in the United Nations Register of Conventional Arms

- possibly the set-up of a regional arms register.

Simila Accord between India and Pakistan of 1972. The parties pledged to

- respect the established cease fire lines,
- resolve their differences over Kashmir through negotiations and by peaceful means.

Agreement on the Prevention of Airspace Violations of 1991 between India and Pakistan. Under the terms of the Agreement

- combat aircraft are prohibited from flying within ten kilometres and
- unarmed military aircraft are prohibited from flying within 1,000 metres of the airspace of the other party, unless permitted to do so,
- notification of flights by unarmed aircraft within 1,000 metres of the other's airspace,
- notification of special air exercise scheduled to take place close to the other's airspace.

Agreement on Advance Notice of Military Exercises Manoeuvres and Troop Movements between India and Pakistan, of 1991, whereby the two countries agree to restrict and give one another prior notification of significant military activities. Under the terms of the Agreement the parties are to

- refrain from carrying out land military exercises at or above the divisional level within five kilometres from each other's borders,
- notify each other of divisional level exercises carried out in the area between the Manawar, Tawi and Ravi rivers, of exercises at the corps level held within a distance of 75 kilometres of each other's borders, and of all exercises conducted at or above the corps level,
- transmit a schedule of planned military exercises 15 to 90 days in advance detailing their type, level, location, duration, and size,
- notification of the concentration of additional troops at or above the division level for internal security or civil relief purposes within 150 kilometres of each other's borders,
- provide adequate clarification about any exercises, movements, or manoeuvres subject to notification. Similar provisions are also contained with respect to naval and air force exercises.

Euro-Atlantic Region

Agreement on the Prevention of Dangerous Military Activities between the Union of Soviet Socialist Republics and theUnited States of America of 1989 containes wider for managing potential confrontations and applied to all armed forces and details for specific activities deemed dangerous military activities, necessitating direct preventive measures including

- entering into the national territory of the other party by *force majeure*, or as a result of unintentional actions
- using a laser in a harmful manner

- hampering the activities of personnel and equipment of the other party in a manner that could harm or damage
- interfering with command-and-control networks in a harmful or damaging manner.

The Forum for Security Cooperation (FSC) of 1992 is intended to provide an institutional framework for negotiating arms control and confidence- and security building measures (CSMS) and aims to promote an open atmosphere based on trust in politico-military questions and devise steps to reduce the risk of armed conflict. The main tasks of the FSC are:

- conducting a comprehensive security dialogue, consultations on reducing conflict risks, inter alia through an annual Security Review Conference and through regular dialogue on various themes in the FSC plenary meetings,
- negotiating confidence- and security-building measures (CSBMs), arms control and disarmament (examples: Vienna Document, Code of Conduct on politico-military aspects of security, Open Skies Treaty)
- combating the illegal proliferation of small arms and light weapons including Man-Portable Air Defence Systems (MANPADS) and munitions
- observing the implementation of the agreed confidence- and security-building measures, in particular the instruments contained therein (for example information exchange, inspections, monitoring activities and military contacts) and organising an annual meeting to assess the implementation of the so-called FSC acquis, that is the entire spectrum of FSC documents and decisions,
- conflict prevention and conflict management supported by the FSC acquis; where applicable launching conflict management mechanisms provided for in the acquis for discussing and clarifying of information exchanged under existing OSCE CSBM obligations, and for assessing the implementation of agreed provisions.

In 1993 the FSC adopted a series of documents dealing with action in localized crisis situations, the regulation of conventional arms transfers, military contacts and defence planning.

OSCE Code of Conduct on Politico-Military Aspects of Security of 1995

- reconfirms fundamental OSCE principles, such as the recognition of state sovereignty, territorial integrity and the inviolability of borders, a commitment to peaceful conflict resolution, renunciation of the threat of force, and states' right to choose their alliances freely.

- contains politically binding rules on the OSCE participating States' deployment of armed forces both at home and abroad, the democratic control of armed forces and other armed state organs, and teaching soldiers about international humanitarian law.

- contains an annual exchange of information of participating States' implementation reports and regular review conferences, starting in 2003 to include information on national counter-terrorism efforts in the OSCE participating States' reports.

Founding Act on Mutual Relations, Cooperation and Security of 1997 between the members of the North Atlantic Treaty Organization (NATO) and the Russian Federation confirms, in particular, that NATO and Russia do not consider each other as adversaries. Furthermore, NATO members and Russia undertake

- to respect the norms of international conduct as laid out by the Charter of the United Nations and the Organization for Security and Cooperation in Europe (OSCE),
- to establish a NATO-Russia Permanent Joint Council as a venue for consultation on security-related issues such as the prevention and peaceful settlement of conflicts, the nonproliferation of weapons of mass destruction (WMD) and the conversion of defence industries, and for joint decision-making and joint action whenever possible,
- to establish military contacts via the creation of military liaison missions on both sides.

In addition, the Act reiterates the assertion of NATO members that no nuclear weapons or new substantial combat forces would be deployed on the territories of new members in the foreseeable future, and that the structure and doctrine of NATO nuclear forces would not be affected by the enlargement of the Alliance.

Euro-Atlantic Partnership Council (EAPC) of 1997 with a membership of 51 states in the Euro-Atlantic Region provides for expanded consultations between participating States on issues such as crisis management, regional security, arms control, and defence planning and policy.

High Seas

The Agreement on the Prevention of Incidents on or over the High Seas of 1972 between the Soviet Union and the United States requires the parties to refrain from conducting threatening manoeuvres, simulated attacks, or disruptive behaviour in international sea areas, and to respect the International Regulation for Preventing Collisions at Sea.

Latin America

The Declaration of Santiago of 1995 calls on OAS member States gradually to adopt arrangements concerning

- the advance notification and invitation of foreign observers to military exercises,
- to engage in the exchange of information on military matters,
- to take part fully in the United Nations Register of Conventional Arms.

The Declaration of San Salvador of 1998 contains proposals for a series of information and communication confidence- and security-building measures (CSBMs) meant to complement the provisions laid out in the Santiago Declaration. It calls on OAS member States

- to encourage contact between elected political representatives,
- to expand the range of military contacts provided for at Santiago
- to include exchanges between military teaching institutions,

- to promote the exchange of information on the size, structure and composition of national armed forces,
- to evolve common methodologies for the reporting of military expenditure,
- to improve and broaden their participation in the United Nations Register of Conventional Arms,
- to continue discussion and consultation on regional arms control.

Middle East

Separation of Forces Agreement between Egypt and Israel of 1974 in the Sinai as part of the cease fire accords which ended the October War of 1973 established a

- a 30 kilometre demilitarized buffer zone east of the Suez Canal,
- an adjacent thin-out zones restricting the deployments weapons and troops to a maximum of 7,000 personnel, 30 battle tanks, and anti-tank guns and missiles, mortars and six batteries of howitzers with a range not exceeding 12 kilometres,
- Egyptian and Israeli air forces were allowed to operate freely up to the demilitarized zone of separation,
- to be monitored by the United Nations Emergency Force (UNEF) assisted by aerial reconnaissance provided by the United States.

Separation of Forces Agreement between Israel and Syria as part of the cease fire accords which ended the October War of 1973 established

- a buffer zone which separated the Israeli and Syrian forces,
- two equal adjacent thin-out zones which limited the deployments of Israeli and Syrian weapons and troops in those areas,
- a demilitarized zone within part of the Israeli-controlled territory,
- to be monitored by the United Nations Disengagement Observer Force (UNDOF).

Sinai Interim Agreement (Sinai II Agreement) of 1975 by Egypt

and Israel foresaw

- Israeli forces relinquishing control of the of the strategically important Giddi and Mitla passes in the Sinai in exchange,
- the establishment around the passes of a tightly monitored 25 kilometre wide demilitarized buffer zone,
- flanked by adjacent thin-out zones on each side,
- Supervision of the buffer zone by 4,000 United Nations Emergency Force (UNEF) troops supported by aerial reconnaissance,
- a system of early warning remote ground sensors,
- as well as an Egyptian and an Israeli signal collection station deployed near the Giddi Pass,
- Limitation of Egyptian and Israeli forces in the thin-out zones to 8,000 troops, 75 battle tanks and 72 pieces of artillery with a range not exceeding 12 kilometres, respectively,

- aerial monitoring flights,
- a Joint Commission and Liaison System to oversee the implementation of the Agreement

Camp David Accords of 1978 signed by Egypt and Israel as a framework for the conclusion

of a peace treaty between Egypt and Israel provided for

- two thin-out zones, one limiting the deployment of Egyptian forces within an area of approximately 50 kilometres east of the Gulf of Suez and the Suez Canal to no more than one division, the other limiting the deployment of Israeli forces within an area of three kilometres east of the international border of the Gulf of Aqaba to no more than four infantry battalions,
- a buffer zone within an area west of the international border of the Gulf of Aqaba of about 20 to 40 kilometres in width
- to be monitored by lightly armed United Nations forces.

Treaty of Peace between Israel and Egypt of 1979 provided for a final

settlement to the conflict in the Sinai, and proclaimed the termination

of the state of war between the two countries. According to the provisions

- all Israeli military forces and civilians were to be withdrawn from the Sinai peninsula,
- a demilitarized buffer zone and three thin-out zones, two on the Egyptian side and one on the Israeli side, were to be established,
- Supervision of the demilitarized buffer by means of low-level aerial reconnaissance overflights,
- on-site inspections carried out by the United States and by four Israeli signal collection stations,
- limitation of the number of troops and type of equipment each party could deploy along the buffer zone (on the Egyptian side restricted to a lightly armed border unit of up to four battalions and civil police units, and one mechanized infantry division of up to 22,000 personnel, 230 tanks and 480 armoured personnel carriers (APC), respectively. On the Israeli limited to four infantry battalions comprising up to 4,000 personnel and 180 APCs and to unarmed aircraft only,
- a Joint Commission be created to coordinate and supervise implementation

Treaty of Peace between Israel and Jordan of 1994. The Parties

- recognized each others' legitimate political rights including sovereignty, territorial integrity and political independence,
- undertook not to employ force or the threat of force against one another,
- pledged to create a mechanism of liaison, consultation and verification and
- committed themselves to the establishment of a Conference on Security and Cooperation in the Middle East.

Arms Control and Regional Security talks (ARCS) of 1991 on regional arms control and confidence- and security-building measures (CSBMs in the framework of the bilateral discussions between Israel and its neighbor had yielded provisional agreement on a series of voluntary CSBMs comprising

- notification of certain military activities,
- avoidance of incidents at sea, maritime search and rescue coordination,
- military contacts,
- the set-up of a communication network centered in Cairo that could lead to the establishment of a hotline between the parties.

South-East Europe

General Framework Agreement for Peace in Bosnia and Herzegovina (Dayton Accords) 1995 between the Republic of Bosnia and Herzegovina, the Republic of Croatia and the Federal Republic of Yugoslavia. As part of the agreemen the parties recognize and agree

- to respect each other's equal sovereignty,
- undertake to implement a series of military measures to support the existing ceasefire including the withdrawal of forces behind a four kilometre buffer zone, the cantonment of these forces and of their heavy weapons (or otherwise their demobilization),
- the establishment of a multinational Implementation Force (IFOR) and of
- a Joint Military Commission to respectively monitor and ensure compliance, and assist with the implementation of the accord.

The Agreement on Sub-Regional Arms Control of 1996 between the Republic of Bosnia and Herzegovina, the Republic of Croatia and the Federal Republic of Yugoslavia is modelled on the Conventional Forces in Europe (CFE) Treaty and establishes

- numerical restrictions on the possession of military armaments by the parties for battle tanks, armored combat vehicles, heavy artillery, aircraft and helicopters, as well as on the deployment of military personnel. The restrictions on the possession of armaments are established on the basis of a 5:2:2 ratio for Yugoslavia, Bosnia and Herzegovina and Croatia, and of a 2:1 ratio for the Muslim-Croat Bosnians and the Serb Bosnians within Bosnia and Herzegovina itself.
- verification provisions with no right of refusal comprising on-site monitoring, annual exchanges of information on the possession of personnel and armaments, and intrusive on-site inspections. A Sub-Regional Consultative Committee is charged with adjudicating disputes which might arise during the implementation of the Agreement.

The Agreement on Confidence- and Security Building Measures in Bosnia and Herzegovina of 1996 between the Republic of Bosnia and Herzegovina, the Republic of Croatia and the Federal Republic of Yugoslavia is modelled on the Vienna Documents. The Agreement foresees

- restrictions on the geographic deployment of troops and heavy weapons,
- restrictions on the conduct of military exercises,
- requirements for the exchange of military information,
- the notification of planned military activities and of changes in military structure and equipment
- the invitation of observers to notifiable military activities,
- the inspection of military forces and the monitoring of weapons manufacturing capabilities.
- a Joint Consultative Commission to oversee the implementation of the Agreement.

Fact Sheet 6

Efforts and Initiatives for Humanitarian Disarmament and Arms Control

Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects of 1981 prohibiting the use of certain conventional weapons. As a framework convention

- Protocol I prohibits the use of any weapon designed to injure by fragments which in the human body are undetectable by x-rays
- Protocol II prohibits the indiscriminate use of landmines, booby-traps and other similar devices, as well as their use against civilians or civilian populations. Amended Protocol II broadens the restrictions applicable to the use of landmines, and of anti-personnel mines in particular.
- Protocol III bans the use of incendiary weapons against civilian populations or objects, and their delivery by air against military objectives located within civilian concentrations.
- Protocol IV prohibits the use of laser weapons specifically designed to cause permanent blindness to the naked eye
- Protocol V Parties obliges participants in an armed conflict to bear responsibility with respect to all explosive remnants of war in territory under their control. After the cessation of active hostilities explosive remnants of war shall be marked and cleared, removed or destroyed.

Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines (Ottawa Convention) of 1999 banning the use, production, acquisition, stockpiling, and transfer of anti-personnel landmines as well as the assistance or encouragement of others to engage in such activities. In addition, States Parties are oblidged to

- destroy all their anti-personnel mines
- clear existing minefields

Convention on Cluster Munitions (Oslo Convention) of 2010 on cluster bombs prohibits to

- use cluster munitions, as defined in the convention,
- develop, produce, otherwise acquire, stockpile, retain or transfer to anyone, directly or indirectly, cluster munitions,
- assist, encourage or induce anyone to engage in any activity prohibited to a State Party.

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Fact Sheet 7

Efforts and Initiatives on Arms Trade and Transparency

UN Register of Conventional Arms of 1991 aimed at increasing transparency requires participating States to submit on a voluntary basis yearly statistical data and possibly background information concerning battle tanks, armoured combat vehicles, large calibre artillery systems, combat aircraft, attack helicopters, warships, and missile systems.

- on national imports and exports,
- domestic procurement, and
- total holdings of
- seven specific weapon categories,

Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies of 1996 commits parties to

- to regulate the transfer of conventional arms and dual-use goods and technologies, as defined by the arrangement,
- to prevent the transfer of unauthorized items,
- exchange relevant information on a voluntary basis, and
- inform each other of approved or denied transfers.

Arms Trade Treaty of 2014 requires States Parties in particular to

- establish and maintain an effective national control system for the export, import, transit, and transshipment of and brokering activities related to conventional arms as defined by the treaty,
- establish and maintain an effective national control system,
- prohibit transfers of conventional arms that would violate obligations under Chapter VII of the UN or where there is knowledge that the items will be used in the commission of genocide, crimes against humanity, grave breaches of the Geneva Conventions of 1949, or other war crimes,
- deny an arms export if there is an overriding risk that the exported arms will be used to commit or facilitate a serious violation of international humanitarian or human rights law or offenses under international conventions or protocols relating to terrorism,
- take measures to prevent the diversion of conventional arms,
- provide annual reports on export and import authorizations

6. **Overview of existing risk reduction measures**

Previous risk reduction measures cover many different policies, ranging, for example, from unilateral No First Use declarations to unilateral decisions to eliminate nuclear weapons arsenals, and from bilateral political statements to multilateral legally binding treaties. Based on an analysis of existing treaties, agreements, decisions or declarations and in line with the categories for risk reduction measures as discussed under Item 1 (General Considerations), the following generic nuclear risk reduction measures can be taken from previous initiatives and efforts, which by their nature contain a certain amount of overlap. Only actual agreements and initiatives are included, not policy proposals that have not been implemented. Where appropriate, relevant experiences in the conventional field are included as well.

Political-doctrinal measures:

- Commitment to the principles and norms as laid out by the Charter of the United Nations and the Organization for Security and Cooperation in Europe (OSCE), such as the recognition of state sovereignty, political independence, territorial integrity and the inviolability of borders and states' right to choose their alliances freely
- Commitments of no first use of nuclear weapons
- Commitment not to employ force or the threat of force against the other party or parties
- Commitment to peaceful conflict resolution through negotiations
- Reaffirmation that parties do not consider each other as adversaries
- Commitment to a cooperative approach to security
- Political statements against nuclear conflict
- Commitment to establish a balance of relevant forces and not to seek unilateral military superiority
- Increased transparency and dialogue on nuclear policy documents such as doctrines and postures
- Information exchange on defense policy, defence and armed forces planning, budgets, procurements

Strategic measures:

- Elimination of nuclear arsenals
- Banning classes of nuclear weapons and/or delivery systems and/or defensive systems
- Reduction of forces to ceilings compatible with the principle of mutual and equal security
- Reductions in numbers of deployed nuclear weapons
- Establishment of nuclear-weapon-free zones
- Reduction of forces to a level which eliminates the capability for large scale offensive action

- Limiting geographic locations of nuclear weapons deployment
- Agreements not to attack nuclear-related facilities
- Increasing protection of nuclear-related facilities, materials and systems
- Increasing non-proliferation efforts

Operational measures:

- Changes to alert status of nuclear weapons
- Transparency to eliminate the capability to launch surprise attacks
- Measures to prevent hazardous military activity
- Enhancing safety and security of nuclear weapons and materials

Confidence and security building measures:

- No military exercises directed against the other Party
- Notification of nuclear-related incidents
- Pre-launch notifications
- Pre-notification of actions susceptible to misinterpretation
- Notifications and detailed exchange of information on relevant weapons, personnel strength and their locations; transparency on command structure
- Verification measures in order to check the information provided and compliance with the provisions, including mandatory on-site inspections, challenge inspections
- Consultations mechanisms to consider and decide issues of implementation - including resolution of ambiguities and differences in interpretation, settle disputes, claims of non-compliance and of measures to enhance the viability and effectiveness
- Complementary verification measures such as national and multinational technical means of verification, including certified sensors
- Cooperative verification measures with the participation of both the inspecting end inspected party
- Verification by a third party, e.g. the United Nations or a joint commission
- Joint review mechanism to oversee the implementation of provisions
- Commitment to refer disputes, that cannot be settled through talks, mediation or arbitration, to the International Court of Justice
- Military confidence-building through contacts, visits to military installation and demonstrations of new major weapon systems or equipment, and facilitating contacts
- Commitment to a comprehensive security dialogue and consultations on reducing conflict risks
- Dialogue and information exchange on pertinent issues

Crisis and conflict prevention and management measures:

- Establishment of crisis and conflict prevention and management mechanisms
- Ensuring clear lines of communication in crisis situations
- Establishment of Nuclear Risk Reduction Centres to exchange notifications of missile launches and other relevant information
- Mechanisms to make inquiries about unclear situations
- Commitment to launch conflict management mechanisms upon request
- Mechanisms for consultations and co-operation as regards unusual military activities, cooperation as regards hazardous incidents of a military nature
- Dedicated communications networks/ hot-lines to provide for a secure and reliable infrastructure for the exchange of relevant information between national military/ political authorities

7. Concluding Reflections on ongoing and previous efforts and initiatives on risk reduction, prepared under the sole responsibility of the Co-Chairs to facilitate the work of the Subgroup 3.

Efforts and initiatives to reduce nuclear risks and risk associated with conventional arms have been an integral part of arms control and disarmament norms. Such measures contribute to an improved international security environment and enable further progress towards nuclear disarmament. However, nuclear risk reduction is not a substitute to nuclear disarmament.

Based on an analysis of previous efforts and initiatives on nuclear risk reduction[44], a number of general conclusions have emerged and can serve as guidelines for discussing the effectiveness of relevant and resilient future NRR measures.

In the view of the Co-Chairs, these conclusions include:

1. Risks associated with nuclear weapons have multiple causes and can be result from a wide spectrum of generic scenarios[45], including:

    - Doctrinal use - in accordance with declaratory policies and ambiguities thereof
    - Use by miscalculation - based on incorrect assumptions
    - Inadvertent use in an escalating conflict or crisis spiraling out of control
    - Accidental use - linked to error, technical malfunction or false alarm
    - Unauthorized use – non sanctioned use or use by non-state actors

2. Interim measures to lower and ideally prevent these risks, pending the complete elimination of nuclear weapons, should be tailored accordingly and be specific in order to be considered effective and efficient. This applies to universal, regional, bilateral and unilateral risk reduction measures.

[44] See annexed papers “Overview of existing risk reduction measures”, “Synthesis Paper on ongoing and previous efforts and initiatives on risk reduction in the nuclear field” and “Synthesis Paper on relevant experiences in the conventional field”, as prepared by the co-chairs in their personal capacity.

[45] These generic scenarios are meant to reflect the current discussion on risks associated with nuclear weapons (see as well the annexed paper “Purposes, Functions and categories of Nuclear Risk Reduction Measures"). Given that nuclear risks most likely would result from complex situations involving security aspects as well as geo-political and technical factors, real life risks most likely contain various elements of these generic scenarios. A more detailed discussion is scheduled under Item 3 of the PoW (..identify all risk factors associated with nuclear weapons…)

3. Nuclear risk reduction can have positive direct and indirect effects. Specific and concrete risk reduction measures in one area could lead to further risk reduction measures in other areas[46]. Nuclear risk reduction can under certain circumstances be a cumulative process.

4. Nuclear risk reduction can consist of, and may be enhanced by an interlocking web of mutually re-enforcing risk reduction measures and can encompass political-doctrinal measures, strategic measures, operational measures, confidence and security building measures and crisis and conflict prevention and management measures[47].

5. Nuclear risk reduction can contribute to a more stable global and regional security environment, allowing for reductions of nuclear arsenals and progress in nuclear disarmament.

6. The political will, especially among NWS, to agree, or unilaterally decide, and consequently implement risk reduction measures is essential. Non-NWS can play an important supporting role.

7. Nuclear risk reduction measures should be designed to remain effective and resilient in situations when political tensions are high, trust is low, and crisis or potential conflict might influence their implementation. For that purpose, nuclear risk reduction should include and be re-enforced by appropriate mechanism for communication, dialogue and crises or conflict resolution[48].

8. An inclusive approach and a broad set of risk reduction measures, tailored to the specific security environment, can broaden and multiply their effect, since it can facilitate security and strategic stability.

9. A cooperative approach to security[49], is an integral part of effective risk reduction measures. Furthermore, such an approach demonstrates a common understanding of risks associated with nuclear weapons.

10. New and emerging technologies[50] need to be considered in order to maintain, or possibly even enhance, the effectiveness and resilience of nuclear risk reduction measures..

11. Dialogue and communication are central elements in agreeing and implementing nuclear risk reduction measures and can constitute a risk reduction measure in itself by demonstrating a willingness to co-operate and show good faith. An interactive, broad and

[46] E.g. Doctrinal restraint could enable strategic risk reduction measures, which in turn could be followed by operational risk reduction measures (not necessarily in that order).

[47] See annex on "Overview of existing risk reduction measures" encompassing as well conventional risk reduction,
[48] E.g. establishment of crisis and conflict prevention and management mechanisms, risk-reduction centers and dedicated communications networks and hot-lines for crises prevention.
[49] E.g. in a particular commitment to the collective security system created by the UN Charter and eventually not to seek relative military advantage or engage in an arms race or military buildup or the introduction of new strategic offensive or defensive capabilities which could offset a stable strategic balance.
[50] E.g. These include, but are not limited to, cyber capacities, artificial intelligence, outer space capabilities, new strategic offensive and defensive capabilities.

inclusive approach to risk reduction, open to all interested states, should cover political-doctrinal measures, strategic measures, operational measures, confidence and security building measure and crisis and conflict prevention and management measures.

12. Furthermore, dialogue on nuclear risk assessment, possibly extended new and emerging technologies, could be an initial element to underpin effective and resilient risk reduction measures.

13. Universal, regional, bilateral and unilateral risk reduction measures are most effective and credible when they are declared in an unambiguous and irreversible manner.

14. Universal, regional and bilateral nuclear risk reduction measures should include built-in provisions for regular consultation and updating, with a view to improve them and in order to reflect in a dynamic manner eventual changes in the geostrategic security environment as well as new technologies. However, in a situation of heightened tensions, risk reduction measures have to be maintained, as taking them back would fuel tensions and risks.

15. Implementation of and compliance with nuclear risk reduction measures are key elements to enhanced security, which is a central objective or nuclear risk reduction. Multilateral or international verification of nuclear disarmament and relevant multilateral agreements merits further consideration.

16. Nuclear risk reduction measures should include mechanisms for review and evaluation as well as for resolving disagreements, possibly enshrined in a legally binding instrument.

17. Transparency provisions can enhance credibility and provide confidence that risk reduction measures are fully implemented. Such provisions should apply to the entire range of risk reduction measures and could be part of a regular reporting mechanism.

18. Nuclear risk reduction measures will have to be designed to ensure that nuclear capabilities and force posture are consistent with these measures, such as doctrinal restraint.

19. Discussions and decisions on risk reduction measures should be inclusive, including through the full, meaningful and equal participation of women.

8.Matrix of notional priority measures to reduce risk associated with nuclear weapons

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Notional priority measures to reduce risk associated with nuclear weapons.	The risk(s) addressed by this measure	Why is this a priority?	Additional comments and/or explanations
Political-doctrinal measures			
1. Declaratory commitments against nuclear conflict (e.g. Reagan-Gorbachew statement: "a nuclear war cannot be won and must never be fought")		A reaffirmation of the Reagan-Gorbachew statement by the P5 would send a strong signal of maintaining global strategic stability as well as promoting world peace and security.	The Reagan-Gorbachew statement was already reaffirmed by China and Russia in the Joint Statement on the Twentieth Anniversary of the Treaty of Good Neighbourliness and Friendly Cooperation between Russia and China as well as by the U.S. and Russia in the U.S.-Russia Presidential Joint Statement on Strategic Stability.
2.Doctrinal restraint, with the objective to diminish the role of nuclear weapons in security doctrines/policies, such as - "no first use", - "sole purpose", - "no launch on attack", - "nuclear deterrence only to safeguard vital interests", - efforts to reduce perceived ambiguity and entanglement between nuclear and conventional weapons, possibly enshrined in a legally binding instrument.	Addresses the risk, that uncertainty about the strategic objectives of potential adversaries can lead to pre-emptive build-up of nuclear arsenals and, in the case of crisis/conflict to a pre-emptive deployment of nuclear forces. Attacks on dual purpose assets, e.g. in space or C3, can be misinterpreted as part of nuclear attack resulting in retaliation. Furthermore, NNWS might not trust that they will not be targeted by nuclear weapons and decide to acquire nuclear weapons.	Doctrinal restraint can - contribute to strategic mutual trust and global strategic stability, - create confidence among NWS as well as with NNWS, - reduce the role of nuclear weapons in security policies, - prevent escalation leading to the use of nuclear weapons, - lessen the danger of nuclear war, - facilitate numerical reductions in stockpiles and thus constitute, under certain conditions, constitute a pathway to nuclear disarmament, - could enable strategic risk reduction measures, which in turn could be followed by operational risk reduction measures such as de-alerting/lowering the alert status of nuclear weapons systems.	By its very nature, doctrinal restraint cannot be verified in advance. Therefore without adequate transparency of force posture and - accompanying confidence and security building measures it risks only to have limited impact in terms of nuclear risk reduction. Furthermore, the point has been made, that - doctrinal restraint concerning nuclear weapons (e.g. no first use) could in certain circumstances actually increase the risk of conventional conflict and - "subjective" policies (e.g. "nuclear deterrence only to safeguard vital interests") would not be operational and would require further discussion (see as well the 1996 ICJ advisor opinion).

			An initial step would be to restate by NPT states parties the implementation of Action 5C of the 2010 Action Plan which calls on NWS to 'diminish the role and significance of nuclear weapons in all military and security concepts, doctrines and policies'. Doctrinal restraint such as "no first use", "sole purpose", "no launch on attack", "nuclear deterrence only to safeguard vital interests" could possibly be enshrined in an international legally binding instrument.
3. Doctrinal restraint with a legally binding character such as negative security assurances (NSA), including greater clarity not to use or threaten to use nuclear weapons against non-nuclear-weapon States and conclude a legally binding international instrument to this effect.	Addresses the risk that nuclear weapons could be used by NWS against NNWS	See above, in particular - creates confidence among NWS and NNWS.	The point has been made, however, reservations by NWS (e.g. attacks with other WMD or against vital interests) would diminish their credibility of NSA as risk reduction measures. Furthermore, the point has been made, that NSA can be an important contribution to non-proliferation efforts
4. Doctrinal restraint in the framework of nuclear-weapon-free zones (NWFZ)	See above	NWFZ are an important contribution to global and regional peace and security as the entail doctrinal restraint both by NWS and NNWS	NWS should continue to support NNWS in establishing NWFZ or zones free of WMD, including in the Middle East, on the basis of arrangements freely arrived at among the States of the region, including through ratifying protocols to the existing nuclear-weapons-free zones.
5. Commitment to - a cooperative approach to security, including commitment not to employ force or threat of force inconsistent with international law and the UN Charter and to that	Addresses the risk of an arms race or military buildup or the introduction of new strategic offensive or defensive capabilities which could worsen the	Underlines the commitment to the collective security system created by the UN Charter and to peaceful conflict resolution through negotiations and demonstrates a common	Entails a commitment not to employ force or the threat of force against the other party or parties, unless authorized by the UN.

end - avoid any armed conflict, as well as - preclude deliberate unsafe, hazardous or dangerous actions that entail the risk of escalation and - preserve and strengthen the existing arms control architecture.	international security situation.	understanding of risks associated with nuclear weapons.	
6. Intensified dialogue and trans-parency, both among NWS and between NWS and NNWS, on risk perceptions and risk reduction measures, nuclear doctrines, in particular nuclear strategies and policies, as well as force postures, defence and armed forces planning and procurements, with the objective to strengthen strategic mutual trust.	Progress on disarmament, risk reduction measures is not made due to lack of NWS-NWS dialogue. Decision makers make overly pessimistic assumptions about potential adversaries' intent and adopt more aggressive nuclear postures than necessary. Overly pessimistic assessments accelerate escalation in a rising conflict. Addresses, furthermore, the concern that risk reduction measures such as doctrinal restraint or a commitment to a cooperative approach to security are discounted as not having concrete security policy consequences.	Strategic mutual trust is crucial and enhances confidence and reduces the risk of misperceptions or miscalculations among NWS as well as with NNWS about the strategic objectives of nuclear deterrence. Discussions on risk perceptions, doctrine and even force posture as less linked to numerical arsenals have more likelihood of progressing while concerns about numerical asymmetry persist.	Transparency can enhance credibility and provide confidence that risk reduction measures in general are fully implemented. However, due regard will have to be given to security and non-proliferation concerns. Nuclear risk reduction should be addressed not only by NWS but also with NNWS. It is important that NWS conduct dialogues on nuclear doctrines, deterrence policies and risk reduction measures and then explain them and discuss concrete risk reduction measures with NNWS.
7. Increasing awareness of the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war and to take measures to safeguard the security of peoples as enshrined by states parties in the NPT.	Addresses all risks associated with nuclear weapons and the likelihood of nuclear weapons use.	To ensure that nuclear weapons are never used again.	The point has been made, that humanitarian consequences of the use of nuclear weapons has to be balanced with national security interests.

Strategic measures			
1. Reductions in numbers and locations of deployed nuclear weapons.	Addresses all risks associated with nuclear weapons and the likelihood of nuclear weapons use.	Contributes to an improved overall international security environment, decreases the salience of nuclear weapons in defence postures and enables further progress towards nuclear disarmament and a world without nuclear weapons.	Nuclear risk reduction measures, including at the strategic level should be tailored to the specific security environment. This applies to universal, regional, bilateral and unilateral risk reduction measures. Pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty, it is essential to refrain any action that would undermine the object and purpose of the CTBT and maintain the existing moratorium on nuclear-weapon-test explosions.
2. Banning and refraining from the development of classes of nuclear weapons and/or delivery systems and/or defensive systems, which diminish strategic stability and increase nuclear risks and could neutralize the nuclear deterrence of others.			
3. Reductions towards an eventual elimination of nuclear arsenals, including through appropriate legally binding measures, by the nuclear-weapon States of agreements concerning nuclear weapon reductions, as well as further consideration of unilateral disarmament measures.			
4. Reduction/conversion of weapons- grade surplus fissile material and their production facilities.			Pending negotiations and the entry into force of a treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices, it is important to maintain/declare moratoriums on the production of fissile material for nuclear weapons purposes, without creating disincentives to negotiate a legally binding FMCT. The point has been made, that the scope of an FMCT (i.e. past and/or future production) is an important issue.
5. Transparency to eliminate the capability to launch surprise attacks and increased predictability of use conditions.	Addresses the concern that risk reduction measures such as lowering the alert status of nuclear weapons, de-targeting and de-mating could be purely declaratory and not	Important towards reductions of nuclear arsenals. Contributes to an improved international security environment in the light of	Due regard will have to be given to security and non-proliferation concerns. The point has been made, that transparency - is as well an important confidence building measure and

	having concrete security policy consequences.	-the re-emergence of great power competition, -the present stress on the nuclear arms control, disarmament and non-proliferation architecture, - perceived lowered threshold by some for the use of nuclear weapons, -new technologies and capabilites -the emergence of new regional crises scenarios	- should extended to conventional armaments as well and that underlying political issues need to be addressed by the same token. Furthermore, the point has been made, that - efforts to eliminate the capability to launch surprise attacks might be unrealistic, - there is a need to regulate the military use of emerging technologies in a legally binding instrument.

Operational measures			
1. De-alerting/lowering the alert status of nuclear weapons systems, de-targeting (e.g. not to target their nuclear weapons at any State and not list any State as the target of nuclear attacks) and de-mating.	Decision making in a time of crisis is truncated, time for verification of an attack is reduced, thus increasing risk of accidental use. Therefore, addresses the risk of use by miscalculation, based on incorrect assumption, inadvertent use, especially in crisis or escalating conflict spiralling out of control, accidental and unauthorized use.	Important towards reductions of nuclear arsenals. Contributes to an improved international security environment in the light of -the re-emergence of great power competition, -the present stress on the nuclear arms control, disarmament and non-proliferation architecture, - perceived lowered threshold by some for the use of nuclear weapons, -new technologies and capabilities and -the emergence of new regional crises scenarios	The argument has been made that such risk reduction measures are not verifiable and entail the risk of a rush to higher alert status to potentially counter an adversarial first strike, thus the potential of creating an uncontrollable dynamic. Furthermore, the point has been made, that the development of new weapons systems could substantially enhance the importance of such risk reduction measures.
2. Enhancing safety and security of nuclear weapons and materials, including measures to avoid accidental or unauthorized launch of nuclear weapons, through appropriate legal/procedural safeguards. In addition, appropriate transparency regarding accidents involving nuclear weapons and on the steps taken in response to these accidents would be essential.	Addresses in particular the risk of accidental and unauthorized use of launching systems in uncertain circumstances, malicious cyberattacks as well as possibly use by non-state actors.	Contributes to contain the "fog of war" particularly in the context of new regional crises scenarios, with global political and economic implications, involving NWS as well as NNWS, relying, in particular, on asymmetric means of warfare, and thus of the specter of regional crises spiraling out of control.	Exchange of experiences and elaboration of best practices would be of particular relevance. The point has been made, that historically regional crises have not contributed to risks associated with nuclear weapons.
3. Agreements to minimize vulnerabilities related to potentially disruptive new technologies and understandings not to launch cyber capacities.	Dialogue and agreements on these issues would reinforce other confidence building measures through building mutual understanding and mechanisms for ongoing	Given exponential growth of cyber capabilities, risk is likely to grow in this area quickly and should therefore be addressed as a priority. Mitigations	Dialogue on emerging technologies, comprehensively would be important, assessing their implications and addressing potential risks that might arise from

4. Further investigation of and dialogue, including joint assessment, on operational uncertainties, pathways to nuclear use, sharing of best practices, and de-escalation pathways.	dialogue on other risk reduction measures. In particular, malicious manipulation of early-warning data and C3 results in escalation based on false premises.	may be more readily achievable given the clear national security interest to the NWS concerned.	them, including a possible moratorium of application of emerging technologies to nuclear weapons systems.
5. Enhance cooperative verification measures with participation of both the NWS and NNWS (e.g. IPNDV and GGE on Nuclear Disarmament Verification).	Non-existence of effective verification measures is an obstacle to mutual trust and confidence in compliance with agreements.	Contributes to development of cooperative verification tools, procedures and technologies, but also reinforcement of cooperation between NWS and NNWS. Furthermore, verification can be an important confidence and security building measure.	The argument has been made, that verification would have to be treaty specific and thus not a generic risk reduction measure.

Confidence and security building measures			
1. Avoiding rhetoric and actions that create an environment that is not conducive to nuclear disarmament and that would increase the risk of nuclear conflict is essential.	Addresses all risks associated with nuclear weapons and the likelihood of nuclear weapons use.	Contributes to an improved overall international security environment	
2. Pre-notification and data exchange agreements, in particular of actions susceptible to misinterpretation, in particular pre-launch notifications.	Missile launches, activity in space etc. can be misinterpreted. Addresses the risk of - outbreak of nuclear war, in particular through misinterpretation, miscalculation, or accident, by providing information in advance, inter alia on ballistic missile launches, especially in crisis or escalating conflict spiralling out of control, accidental and unauthorized use, - serious, unintended confrontation between forces by providing a framework for resolving any incident expeditiously and peacefully.	Relatively modest, achievable measures that could lay foundation for other more comprehensive risk reduction measures. Given the increasing number of states, in particular NNWS, possessing dual use means of delivery, a precautionary approach to their use/deployment is of heighten relevance.	On Ballistic Missile Launch Notification Agreement see - 1988 U.S.-Soviet Agreement (preceded by notification provisions under the 1971 Accident Measures Agreement and the SALT II Treaty (which never entered into force); and followed by notification provisions in the START I Treaty and the New START Treaty) - 2002 Hague Code of Conduct against Ballistic Missile Proliferation (United States, Britain, France, and Russia are Subscribing States.) The point has been made, however, that HCoC concentrates on military aspects and does not foster civilian developments. - 2009 Chinese-Russian Agreement, extended in 2020. On Agreement on Reciprocal Advance Notification of Major Strategic Exercises see - 1989 U.S.-Soviet Agreement (followed by notification provisions under the START I and New START Treaties. On Incidents at Sea Agreements see - 1972 U.S.-Soviet Agreement (with 1973

			Protocol and 1998 Exchange of Notes) - 1986 British-Soviet Agreement - 1989 French-Soviet Agreement - 2014 U.S.-China MOU on Rules of Behavior for the Safety of Air and Maritime Encounters. On Dangerous Military Incidents Agreement see - 1989 U.S.-Soviet Agreement However, the point has been made, that such risk reduction measures are contingent on the general political framework
3. Sustained efforts to enhance transparency on nuclear arsenals, in particular notifications and detailed exchange of information on relevant weapons, personnel strength and their locations, transparency on command structure and dual-use capabilities (nuclear and conventional).	Addresses the risk, that states overestimate the size, posture or growth of nuclear arsenals of potential adversaries and respond by increasing and/or deploying their own arsenals more aggressively, leading to a pre-emptive build-up of nuclear arsenals and the risk of an arms race or the introduction of new strategic offensive or defensive capabilities which could offset a stable strategic balance.	Major power competition (e.g. in. the form of nuclear weapons build-up and modernization) threatens to diminish trust. Transparency can contribute to an improved international security environment in the light of -the re-emergence of great power competition, -the present stress on the nuclear arms control, disarmament and non-proliferation architecture, -new technologies and capabilities. Overall, transparency delivers more stability – for everyone.	The argument has been made, that the effectiveness of transparency as a risk reduction measure is contingent on - the appropriate degree, in order not the endanger relevant security concerns (e.g. enhance the risk of a first strike), - the concrete security situation and - the general political framework (regionally or globally).
4. Military confidence-building, including military-to military dialogues, through contacts, visits to military installation and demonstrations of new major weapon systems or equipment, and facilitating contacts.			
5. “Nuclear Risk Reduction” as a standard item on the agenda in relevant fora or meetings, be it the NWS (P5) meetings , keeping the wider NPT membership informed, or the meetings of		Establish work structure for sustained attention in the appropriate format. Conduct such a risk reduction dialogue in an inclusive manner, taking into account the perspectives of non-	

the NPT states parties by establishingappropriate structures (facilitators, working groups).		nuclear-weapon States and including them in these efforts	

Crisis and conflict prevention and management measures			
1. Mechanisms for consultations and co-operation, including risk reduction centers, with regard to unusual military activities, cooperation with regard to hazardous incidents of a military nature.	Addresses the risk that uncertainty about unusual military activities and/or hazardous incidents of a military nature can lead to unintended escalation. Such mechanisms would reduce the risk of misinterpretation by providing immediate information about accidental, unexplained, or unauthorized nuclear use.	Given increasing strategic competition, escalation is the most likely pathway to nuclear use. In this context, crisis and conflict prevention and management measures are of particular relevance in light of -new technologies and capabilites -the emergence of new regional crises scenarios -the proliferation of dual use means of delivery Risk Reduction Centers, in particular, provide a permanent, rapid, reliable, and secure means for exchanging notifications under arms control and confidence building agreements.	On Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War ("Accident Measures" Agreement) see in particular: - 1971 U.S.-Soviet Agreement - 1976 French-Soviet Agreement - 1977 British-Soviet Agreement On National and Nuclear Risk Reduction Centers see - 1987 U.S.-Soviet Agreement on the Establishment of Nuclear Risk Reduction Centers (Amended in 2013)
2. Dedicated and crisis-proof communications networks, hot-lines lines for secure and reliable exchange of relevant information between high level national political authorities, in particular in crisis situations.	Addresses the risk that lack of communication can lead to use - by miscalculation, based on incorrect assumption, - inadvertent use, especially in crisis or escalating conflict spiralling out of control, - accidental and unauthorized use by creating channels for rapid communication to reduce the risk of misunderstanding in crisis situations and thus to reduce the risk of nuclear use		On hotline agreements see in particular: - 1963 U.S.-Soviet Memorandum of Understanding (MOU) - 1966 French-Soviet Hotline Agreement - 1967 British-Soviet Hotline Agreement - 1996 Chinese-Russian Hotline Agreement - 1998 U.S.-Chinese Hotline Agreement On Prevention of Nuclear War Agreement see - 1973 U.S.-Soviet Agreement
3. Enhanced military-to-military contacts, dedicated and crisis-proof communications networks, joint data centers and hot-lines lines for secure and reliable exchange of relevant information between national military authorities, in particular in crisis situations.			
4. Pursuit of early conflict prevention and resolution in relation to nuclear threats and in particular crisis and conflict prevention and management mechanisms	Addresses the risk that unusual military activities, hazardous incidents of a military nature and regional crisis could spiral out of control if not contained in time through effective and efficient crisis and conflict prevention and management		

	mechanisms by framing relations in line with the objective to remove the danger of nuclear war and of the use of nuclear weapons.		