STUDY

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# Prospects for Arms Control in Europe

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- The complex linkages between conventional and nuclear disarmament as well as plans for missile defenses are the topic of this study. Military disparities between NATO and Russia impede arms control progress. NATO has an advantage over Russia in most military categories. Parity exists on only in the field of strategic nuclear weapons, while Russia has a numerical advantage in holdings of short-range tactical nuclear weapons. The large arsenal of Russian tactical nuclear weapons as well as NATO's tactical nuclear weapons are hindering disarmament.

- New NATO members particularly reject a too far-reaching engagement policy vis-à-vis Moscow. Russia, on the other hand, is not willing to support a rapprochement in arms control because it is facing NATO's conventional predominance. This situation is further complicated by unsolved subregional conflicts and the technological supremacy of US military capabilities.

- The study highlights four approaches to conventional and nuclear arms control in Europe. Firstly, confidence-building and transparency should be improved, for instance in the field of tactical nuclear weapons. Secondly, opportunities to cooperate, especially on missile defenses, should be identified and implemented. Thirdly, quantitative increases and qualitative improvements of military capabilities, for instance in the field of strategic conventional systems, need to be avoided through agreements and self-restraint. Finally, weapon systems that have lost their military or political usefulness should be eliminated.

# Content

# 1. Introduction

Twenty years after the East-West conflict came to an end, the military situation in Europe has been reversed. Until the demise of the Soviet Union and of the Warsaw Pact the security policy of the NATO states was determined by their assessment of the Warsaw Pact states' conventional superiority. Since the early 1990s, however, NATO's conventional military superiority has been growing. Responsible for this development are the weakness of Russia's forces and the modernisation of Western and, in particular, US conventional forces. At an overall high level of nuclear armament, Washington and Moscow have agreed to maintain parity with regard to strategic nuclear weapons, while Russia enjoys numerical predominance when it comes to tactical nuclear weapons.

After the disarmament setbacks during the George W. Bush administration, the arms control process got under way again in 2010. The Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in May ended successfully with the adoption of an Action Plan. With the conclusion of the New START Treaty (New Strategic Arms Reduction Treaty) on reducing the strategic nuclear arsenals of Russia and the USA mutual verification of the nuclear arsenals resumed. Both sides established a negotiating framework for future disarmament steps (see Lichterman 2010). Furthermore, the agreement between NATO and Russia to seek cooperation on the goal of setting up a missile defence system and the willingness of both sides to continue the dialogue on adapting the conventional arms control regime in Europe are important building blocks on which efforts to push ahead with disarmament and arms control can be based.

These advances in arms control are also an expression of a political rapprochement between NATO and Russia. However, this process of political accommodation is still far from being stable and sufficiently comprehensive to render military disparities insignificant. Thinking in terms of deterrence still dominates relations between NATO and Russia and that is likely to remain the case for the foreseeable future. The complex interaction between conventional and nuclear weapons is an ambivalent element which could once more intensify military competition, but could also help to reduce tensions.

The situation in Europe demonstrates the effects of a fundamental dilemma of nuclear disarmament: the less the »equalising« effects of nuclear weapons come to bear, the more significant conventional disparities – both quantitative and qualitative – become. Conversely, the more conventional military capabilities differ, the more nuclear weapons are perceived as guarantees of security. With respect to achieving lasting peace, conventional and nuclear imbalances can have differing negative consequences:

- The threshold for the use of nuclear weapons can be lowered if the risk of nuclear escalation is perceived as small. In particular, regional conflicts can escalate more easily if the stronger party to the conflict is convinced that nuclear escalation can be avoided (see Acton/Perkovich 2009: 21). For example, German Foreign Minister Guido Westerwelle keeps on warning that: »Nuclear disarmament must not re-open the possibility of conventional wars« (Westerwelle 2010a).

- Parties can complicate or block disarmament and arms control agreements by linking different issue areas. .

- Arms races can be triggered or accelerated if the superior side seeks to extend its dominance and/or the weaker side wishes to establish a balance of military power.

In Europe, the implications of these problems are already apparent. In particular, conventionally weaker Russia links advances in nuclear arms control to a reduction of conventional imbalances. The missile defence plans of the USA and NATO pose a particular problem in this regard, because some in Russia fear that over the long term they could jeopardise its nuclear second-strike capability. Moscow also argues that for the time being it cannot give up its substrategic nuclear weapons because these weapons balance NATO's superior conventional capacities in Europe. Furthermore, Russia is increasing its own efforts to increase and modernize conventional capabilities in order to close or at least reduce the gap, in particular vis-à-vis the USA. The USA, by contrast, is not willing to reduce its advantages in conventional capabilities in order to improve relations with Russia.

Nevertheless, the reduction of imbalances in one area can enable progress in another. Such a positive dynamic requires, however, that political relations are relaxed and/or that threat perceptions are diminished by the sacrifice

of military capacities. Hitherto, there has been little sign of such a development in Europe.

## 1.1 A Changed Environment for Arms Control

The fundamental change in the strategic framework in Europe over the past 20 years has made a comprehensive approach to arms control, which takes into account conventional and nuclear imbalances at regional and strategic level, including all relevant actors, more difficult. This concerns the changed political relations within the Euro-Atlantic and Eurasian region itself; the change in global power and conflict constellations; and also far-reaching changes with regard to armaments and warfare. Individual trends overlap and link up with one another in various ways:

1. The bipolar confrontation of the East-West conflict was not replaced by all-round cooperation but by a complex mix of cooperative and confrontational elements. The continuation of confrontational components – for example, geopolitical competition – makes arms control necessary, while the existence of cooperative approaches makes it, at least in principle, possible.

2. Politics and thus security policy is structured much more multilaterally in Europe today. As a consequence, the leading power – the USA – can no longer bring smaller states (not to mention larger ones, such as Turkey) into line just like that, but sometimes only at high cost. This is particularly the case when these states are able to establish domestic policy positions in the USA via a diaspora who can put pressure on Congress.

3. The comparatively little prominence of the remaining conflicts in Europe has led to a neglect of issues of European security policy also in those areas of conflict which, despite their subregional character, are symbolically relevant to Europe as a whole, and have impact on the US-Russian relationship. At the latest with the Georgian war in 2008, but on closer examination as early as Russia's Istanbul commitments in 1999, it became clear that subregional conflicts in the current political constellation have the potential to obstruct the whole security policy process in Europe.

4. Security policy priorities have shifted from the centre of Europe to its south-eastern flank. Europe's southern border is now the focus, which to a large extent is synonymous with Russia's southern border, in the so-called »arc of crisis« from Iraq/Iran through Afghanistan/Central Asia to Pakistan. This region is characterised by an accumulation of diverse overlapping problems including interstate and civil wars, risks of transnational violence, nuclear proliferation and weak states. Many of these problems are individually seen as almost insoluble and as a group even more so. One consequence of this shift with regard to conflicts is that the political relevance of individual states has changed dramatically. For example, Germany's special position due to the Cold War is a thing of the past, while Turkey has become a key state for stability and security in its extended neighbourhood.

5. In 1990 and even in 1999 China was not yet a relevant factor for European security policy. At the beginning of the 1990s Russia could have joined NATO with no need to take China's response into account. Today, as Dmitri Trenin rightly says, this would no longer be possible: »Russia's membership [of] NATO would be accepted very coolly by China, which would probably view this as the final stage of its geopolitical encirclement by the United States and its NATO allies« (Trenin 2010b). It is therefore all the more remarkable that the Medvedev Proposal for a European Security Treaty concerns exclusively OSCE Europe.

6. The technological conditions of warfare and thus warfare itself have changed fundamentally over the past two decades. The focal point of the projection of military power is no longer the five categories of treaty-limited equipment of the Treaty on Conventional Armed Forces in Europe (CFE Treaty) – tanks, armoured combat vehicles, artillery systems, combat aircraft and attack helicopters – but ballistic missiles armed with precision munitions and guided missiles of all kinds. Encounters between heavily armoured formations have been superseded by smaller, highly mobile formations coordinated by space-based guidance systems. The distribution of such capabilities is highly asymmetrical in favour of the USA: NATO Europe and Russia lag a long way behind and will not attain such capabilities in the foreseeable future.

7. Despite all this, the classic five armaments categories have not lost relevance in subregional contexts, as long as the USA is not a participant in such wars, such as the Georgian war of 2008.

8. The fundamental change in the conventional balance in favour of the USA and to the detriment of Russia has raised the status of nuclear weapons in Russia's military strategy and thus has imposed new requirements on a comprehensive framework for arms control policy. It remains to be seen whether this trend will be limited to Russia or whether other states in a similar position will also be affected.

### 1.2 Question

Against this background the purpose of this study is to ask what effects military disparities will have on European security and, in particular, on the progress with disarmament which is so important for Europe. What are the long-term and strategic goals being pursued by the involved countries with regard to disarmament and arms control? What are the next feasible steps in nuclear arms control? What expectations are there concerning the conventional arms control regime? What kind of cooperation is necessary and sensible with regard to missile defence from the standpoints of NATO and Russia? Above all, how can the cross connections between these issues be used to revitalise arms control in Europe?

The study will show in four steps how the connections between the various issue areas can be used positively in order to strengthen European security. Section 2 contains a comparative overview of the conventional and nuclear power balance between NATO and Russia in the four key areas of conventional weapons systems, nuclear weapons, missile defence systems and strategic conventional systems. Section 3 deals with the connection between conventional and nuclear disarmament from the standpoint of the NATO countries. Section 4 considers the extent to which, from the Russian point of view, NATO's conventional superiority stands in the way of including tactical nuclear weapons (TNW) in arms control and what the connections are to the CFE regime. The concluding section considers what options are available for advancing conventional and nuclear arms control in Europe.

## 2. Comparative Overview

### 2.1 Conventional Arms Potential of NATO and Russia

Russia is substantially inferior to NATO in the area of conventional weapon systems. The number of heavy weapons deployed by NATO exceeds that of Russia two- or threefold – with regard to surface warships it is even greater (see Table 1). Russia's qualitative inferiority is even greater than these figures suggest since Russia in the past two decades has neither substantially invested in new weapons systems nor modernised what it already has. Its conventional arsenals are much older than those of NATO. The mean reason for this is Russia's comparatively low procurement expenditure over the past decade (2000–2009) which has averaged only 16 per cent of that of the European NATO states (see Table 2).

In particular regions – for example, in relation to the Baltic states (see Table 3) or Georgia – Russian forces are quantitatively superior. This is viewed with alarm in the states concerned, and leads to specific positions with respect to assessments of the situation and of the potential for further progress on conventional arms control in Europe. However, qualitative shortcomings with regard to arms and military forces, as well as their reform, which has made no progress for years, means that such quantitative figures are meaningful to only a limited extent. In the Georgian war in 2008, for example, the quantitatively much better equipped Russian forces had to struggle with considerable technical and logistical problems (see, for example, McDermott 2009).

Up to 2007, before the extent of the effects of the global economic crisis on Russia became clear, the Russian government presented extremely ambitious modernisation plans for equipping its armed forces. The current plans are not less modest. They envisage a trebling of procurement expenditure between 2011 and 2020 compared to the 2007–2015 plan (see Subbotin 2010). Overall, a procurement volume of 20 trillion roubles (715 billion US dollars) is planned. In the first stage spending will rise from below 500 billion roubles (18 billion US dollars) in 2010 to 1,160 billion roubles (41 billion US dollars) in 2013 (see Druzhinin 2010). Spending on heavy weaponry would then be around 700 billion roubles (25 billion

US dollars).[1] Even this level of spending, whose funding is dependent on a significant recovery in government spending, is still far below the spending of the European NATO member states (2010: around 70 billion US dollars), never mind that of the USA (2010: around 200 billion US dollars) (see NATO 2010a). The main focus of procurement will be fighter aircraft (SU-34s and SU-35s), submarines and surface warships, as well as communication equipment for the army.

NATO's superiority – and especially that of the USA – is particularly marked with regard to military research and development. Although the Russian arms industry can finance part of its research spending through arms exports, there are still substantial deficiencies with regard

1. The figures cited in the previous source relate to total procurement volume, including purchases for operational purposes, logistics and so on. The estimate of the proportion of heavy equipment procured rests on the comparison of spending on heavy equipment and the average total procurement spending of NATO member states.

Table 1: Comparison of weapons stocks, Russia/NATO (as of 1 January 2010)

| | Battle tanks (CFE area) | Artillery (CFE area) | Armoured combat vehicles (CFE area) | Attack helicopters (CFE area) | Combat aircraft (CFE area) | Large surface warships (worldwide) | Submarines (worldwide) |
|---|---|---|---|---|---|---|---|
| **NATO** | 11505 | 13664 | 22790 | 1237 | 3802 | 211 | 133 |
| **Russia** | 4508 | 5364 | 8944 | 410 | 1828 | 57 | 6 |
| **Ratio** | 2,6:1 | 2,5:1 | 2,5:1 | 3,0:1 | 2,1:1 | 3,7:1 | 2,0:1 |

Note: Data on armed vehicles, aircraft and artillery are based on data exchange within the framework of the CFE Treaty (http://first.sipri.org/) and concern only the area in Europe regulated by this treaty (not including NATO member states in the Baltic or Slovenia and not including Russian assets east of the Urals). The figures on warships are based on the categories of the Military Balance of the International Institute for Strategic Studies (Principal Surface Combatants, Submarines), see Military Balance 2010.

Table 2: Comparison of military expenditure, Russia/NATO (average 2000–2009, billion US dollars, 2008 prices)

| | Military spending | Procurement of military equipment | Spending on military research and development |
|---|---|---|---|
| **Russia** | 44 | 9 | 3 |
| **NATO** | 850 | 200 | 70 |
| **NATO-Europe** | 313 | 57 | 12 |
| **Ratio between NATO-Europe and Russia** | 7,1:1 | 6,3:1 | 4:1 |

Note: For data on military spending see SIPRI (2010); for data on procurement, see NATO (2010a). Spending on military research and development is partly estimated, based on the cited sources, as well as EDA (2011).

Table 3: Comparison of Baltic states and bordering Russian military districts (as of early 2010)

| | Forces | Battle tanks | Artillery | Armoured combat vehicles | Attack helicopters | Combat aircrafts |
|---|---|---|---|---|---|---|
| **Estonia** | 4450 | 0 | 284 | 88 | 4 | 2 |
| **Latvia** | 5160 | 3 | 76 | 0 | 6 | 3 |
| **Lithuania** | 8380 | 0 | 133 | 187 | 9 | 5 |
| **Adjacent Russian military districts** | 39200 | 1137 | 1168 | 1185 | 147 | 256 |

Source: Acton (2011).

to the development of modern weapons systems. It has therefore been proposed in Russia increasingly to purchase weapons in the West. The procurement of four French Mistral helicopter carriers for over one billion euros could be the first example of this.

## 2.2 Treaty on Conventional Armed Forces in Europe

The Treaty on Conventional Armed Forces in Europe (CFE Treaty) signed by the then 22 member states of NATO and the Warsaw Pact (officially: the Warsaw Treaty Organization of Friendship, Cooperation, and Mutual Assistance) in November 1990 was for a long time an indispensible »cornerstone of European security«. With the aim of eliminating strategic offensive capabilities in Europe the Treaty introduced equal ceilings in five categories of conventional heavy weapon systems (battle tanks, armoured combat vehicles, artillery systems, combat aircraft and attack helicopters) for the two »groups of States Parties«, namely the members of NATO and the Warsaw Pact. The same purpose was served by a regional system comprising three concentric zones around the frontline between East and West Germany: this was intended to prevent concentrations of forces facilitating major offensive operations at the line of contact. In order to prevent any outflanking of this regional system separate ceilings were agreed on for the southern and northern »flank regions«. The Treaty was safeguarded by a detailed information exchange and intrusive on-site inspections (see Hartmann et al. 1994; Zellner 1994). The CFE Treaty made a decisive contribution to safeguarding the system change in Central and Eastern Europe which commenced in 1989 in terms of military policy. This concerns in particular the military aspects of German unification, the dissolution of the Warsaw Pact and the fall of the Soviet Union.

During the two decades of its existence the CFE Treaty experienced two major adaptations: the modified flank agreement adopted at the CFE Review Conference in May 1996 and the Adapted CFE Treaty (ACFE Treaty) signed by the now 30 States Parties at the OSCE Summit meeting in Istanbul in November 1999. Because it restricted the mobility and deployability of its forces in particular in the northern Caucasus, the flank rule has always been regarded as a nuisance by the Russian Federation. In the course of the first war in Chechnya (1994–96) Russia exceeded the upper threshold in the flank region and emphatically demanded the abolition of the flank rule, or at least a raising of its ceilings. The NATO states assented to the latter in May 1996 and conceded to Russia considerably higher ceilings for the flank region. However, the US Senate bound ratification of the flank document to 14 amendments with legal force, which implied among other things that the flank document must in no way impede the withdrawal of Russian forces from Georgia and Moldova (see Kühn 2009). In this way for the first time a linkage was made between the further development of overall European arms control and the resolution of subregional conflicts.

The ACFE Treaty signed in November 1999 had become necessary because members of the now merely nominal eastern »group of States Parties« had become members of the western Group, NATO. The ACFE Treaty replaces the group ceilings with a network of national and territorial ceilings allocated to individual States Parties or their territories. The regional system, with the exception of the flank rule, was abolished. The ACFE Treaty, however, has to date been ratified only by Belarus, Kazakhstan and Russia. After a controversial debate, at the USA's instigation the NATO states agreed at the Prague Summit in 2002 to ratify the ACFE only when Russia met the so-called Istanbul obligations. This concerns Russia's binding declaration at the Istanbul Summit to withdraw its forces from Georgia and Moldova. In this way the linkage between pan-European arms control and subregional conflicts was raised from the inner-US to the international level. However, Russia had always rejected this linkage and had never completely met its Istanbul obligations. After the 2008 Georgian war implementation receded even further into the distance.

In response to the failure to ratify the ACFE Treaty Russia »suspended« the CFE Treaty in December 2007: that is, it no longer participated in information exchange and neither received nor dispatched inspection teams. This suspension, which is not foreseen in the CFE Treaty, was linked to a series of additional demands, in particular, lower ceilings for NATO states and the abolition of the flank rule. Attempts made within the framework of the Parallel Action Package proposed by NATO in spring 2008 to push forward with ratification of the ACFE and implementation of the Istanbul obligations in parallel, failed (see Zellner et al. 2009).

In June 2010, the NATO states, at US initiative, launched another attempt to reform the conventional arms control regime in Europe on the basis of the three principles of mutual restraint, mutual transparency and host nation consent. Since then there have been consultations at irregular intervals in the format of »36«, that is, the 30 States Parties and the six new NATO states that are not (yet) CFE States Parties. After some initial optimism, the talks failed in July 2011. The CFE Review Conference on 29 September 2011 also did not bring any progress. The reason for this negative development is differences concerning the formulation of the host nation consent principle, according to which states must expressly consent to the stationing of foreign forces on their territory. This principle which NATO states refer explicitly to Georgia reintroduces the old linkage between pan-European arms control and subregional conflicts, on which ACFE ratification has already foundered.

Although the relevance of the CFE regime has been diminished for a number of political and military reasons, it would be detrimental to security and stability in Europe if the CFE Treaty would finally fail:

1. The establishment of a conventional balance between the NATO states and Russia would make sense, although less for military reasons than for politico-symbolic ones and not based on parity but on sufficiency.

2. As the example of the South Caucasus shows, the CFE Treaty is an appropriate instrument for addressing subregional disparities. In other regions, such as the Baltic, it could be extended for that purpose.

3. The rules on verifiable transparency provided by the CFE Treaty cannot be replaced by other instruments, namely the 1999 Vienna Document (see Vienna Document 1999).

4. Finally, the failure of the CFE could have a negative impact on other instruments of cooperative security, in particular the OSCE.

For all these reasons it is to be hoped that the States Parties can still find a way to keep open the door for a future reform of the conventional arms control regime in Europe.

## 2.3 Prompt Global Strike Program in the USA

For some years now the Conventional Prompt Global Strike (CPGS) Program has been pursued in the USA, to develop and build capabilities for conventional strikes with long-range delivery systems and high accuracy. A whole spectrum of delivery systems, such as conventional ballistic missiles, cruise missiles or unmanned aircraft, is to be developed. Such conventional carrier systems would, in principle, give a US president the option of preventive strikes on critical targets within a matter of hours. These future capabilities can also be seen in the context of a debate on a continuing de-nuclearisation of US security policy. The US Congress has supported these developments, but to date the CPGS program has remained limited. The Obama administration has significantly toned down the rhetoric of the Bush administration, although development programmes remain in place and there is increasing pressure to develop and deploy conventional counterforce systems. Strategic conventional delivery systems with high accuracy could be used in the event of war, either preventively or pre-emptively.

Many new questions arise from the introduction of such CPGS systems. Is it even technically possible to find and destroy targets precisely from great distances? How will Russia and China react to these developments? Will other states react by incessantly procuring nuclear weapons? Will conventional precision weapons replace nuclear weapons over the long term? Will military intervention as a result be more probable and could misperceptions lead to new wars between the great powers? Since many programmes are still in the development stage only provisional answers are possible here.

### 2.3.1 Past History – Pro et Contra

Prompt Global Strike systems (PGS systems) already found their way into US armaments planning under George W. Bush and his Secretary of Defense Donald Rumsfeld within the framework of the »new triad«, which combines new long-range nuclear and conventional offensive systems, introduced after 11 September as part of the Bush doctrine of prevention.[2] The idea is to

2. For example, in the National Security Strategy of 2002: »We must continue to transform our military forces to ensure our ability to conduct rapid and precise operations to desired results by developing assets such as long-range precision strike capabilities« (The White House 2002: 29).

make available to the US president long-range conventional precision munitions in order to strike at and destroy without delay terrorist camps or »rogue states'« weapons of mass destruction. The US Strategic Command (US STRACOM) was tasked in 2002 with developing the first studies. Hearings were held in the US Congress.[3] In May 2003, the US Air Force adopted a Mission Need Statement for future PGS missions, in accordance with which the USA should be in a position to take action against high-pay-off targets worldwide and within minutes or at least hours (see Jumper 2003).

The pros and cons were discussed in various technical articles and studies (see Gormley 2009; Sugden 2009; Woolf 2010; Bunn/Manzo 2011). Using the PGS systems otherwise inaccessible targets which are well defended against air attack could be reached without risking the lives of the pilots. The USA cannot maintain a presence everywhere in the world and there are regions which are difficult to get at with conventional delivery systems. Using long-range weapons, attacks can be launched from US soil and the number of foreign bases can be reduced. Conventional »tailored« attack options boost deterrence because their deployment is more probable and would help to reduce the number of nuclear weapons (see Grossman 2005).

The counter-arguments were also raised in particular in the debates in Congress (see Pollack 2009; Gormley 2011: 43ff). What is at issue are new »niche capabilities« which are in no way intended to replace nuclear options but rather to provide something qualitatively new. The technical problems and potential costs are horrendous, however, and precision attacks could already be carried out using existing means. Reverting to adapted intercontinental ballistic missiles (ICBM) would increase the risk of nuclear war since Russia and China could misconstrue an attack (the problem of ambiguity). The building up of conventional global attack options would weaken arms control and make further nuclear disarmament impossible. Another problem is the fact that perfect information concerning the location and purpose of a target is a crucial condition for an attack. In other words, the priority here is not so much the technical possibilities but the capabilities of intelligence targeting.

3. On this, see the statements by Admiral Ellis and General Cartwright, commanders of US STRATCOM (Ellis (2003), Cartwright (2005)).

### 2.3.2 Technical Options for PGS Systems in the USA

Today, global attacks using conventional precision munitions are entrusted to manned aircraft, such as B-1, B-2 or B-52 bombers or F-15/18 or F-22 fighters. The trend towards using unmanned means of delivery for conventional attacks cannot be overlooked, however. Since 2006, the US Navy has been calling for the adaptation of two of the 24 nuclear warhead carrying Trident missiles on board its 12 Ohio-class nuclear submarines for PGS missions. Two new conventional warheads for surface targets and bunkers are to be developed. As from fiscal year 2007, 503 million US dollars were requested for the Conventional Trident Modification Program but Congress reduced it. The main objection was the indiscrimination of the missile payload. The launch of a conventionally armed Trident missile could be erroneously interpreted by Russia or China as a nuclear attack. For this reason the US Navy is pressing ahead with studies on the development of a submarine-launched intermediate-range ballistic missile, which is not prohibited by the Intermediate-Range-Nuclear-Forces Treaty (INF Treaty).

The refitting of four other Ohio-class submarines with around 600 conventional Tomahawk cruise missiles is almost complete. A supersonic cruise missile, based on the Tomahawk, is now in development. Russian experts assume that in the near future there could be 2,900 long-range cruise missiles on board ship-borne and land-based carrier systems (see Miasnikov 2009: 105ff). The US Air Force favoured the development of a land-based missile (conventional strike missile) which in the second flight phase uses gliding warheads to transport conventional payloads over long distances. Such missiles only have partially a ballistic trajectory and, since they are not strategic carrier systems, are not restricted by the START treaties. Within the framework of the futuristic FALCON study proposed by Donald Rumsfeld in 2003, a supersonic cruise missile (common aero vehicle) would be introduced by the USA and transported in outer space in order to destroy targets on earth at high speed. The US Army is also working on its own »Advanced Hypersonic Weapon«. The Pentagon is currently testing a small unmanned space shuttle (X-37) which could be used as both a space weapon and as a bomber. Other alternatives, such as the use of unmanned missiles and attack options from or in space – for example, anti-satellite weapons – have long been under discussion (see Neuneck/Rothkirch

2006). Most programmes are in the early stages, and are in any case extremely expensive and technologically complex. However, they illustrate the technological momentum which characterises the ongoing conventionalisation and automation of global warfare.

### 2.3.3 Significance for the Deterrence Arsenals of the USA and Russia

The Obama administration has renounced the aggressive rhetoric of the Bush administration and has downgraded PGS program developments to regional deployment.[4] The Pentagon is conducting a number of programmes to improve forward deployed forces, for example, the equipping of heavy bombers with conventional precision munitions. The Nuclear Posture Review Report of 2010 regards PGS as one component of a strengthening of regional deterrence capabilities (see US Department of Defense 2010b: 34). Also in the future, global strike systems, such as unmanned glider aircraft, are to be developed and tested to a limited extent.[5]

The deployment of conventional precision munitions in the Gulf wars, Kosovo and Afghanistan has already given the military in Russia, China and other countries cause for concern. The development of ballistic missile defence and CPGS systems could strongly influence the strategic deterrence arsenals of both nuclear powers over the long term. The majority of the Russian strategic community assumes that US missile defence is being built to circumvent Russia's deterrence potential over the long term and to achieve strategic superiority (see Arbatov 2011: 17). It is argued that the four conventionally modified Trident submarines with hundreds of accurate Tomahawk cruise missiles (up to 616) on board form the basis of a conventional first-strike capability on the part of the USA against Russia's nuclear deterrence arsenal. The new version of the Tomahawk can be reprogrammed mid-flight and is able to patrol the target for some time, which could increase accuracy and also improve the chances of hitting mobile Topol-M ICBMs. These capabilities are further underpinned by improved reconnaissance and space-based guidance.

As early as 2006, American analysts remarked that the USA's technical resources would give it nuclear primacy in relation to Russia and, in particular, China (see Lieber/Press 2006a, 2006b). According to Russian press reports, between 2012 and 2015 US pre-emptive strike potential could be developed to such an extent that it would be capable of destroying 70 to 80 per cent of Russian nuclear forces (see Moscow Agentstvo Voyennykh Novostey 2008). Military experts in Russia point to the improved destructive capabilities of US precision weapons (see Miasnikov 2009: 105ff). The scenarios put forward may appear to be improbable and exaggerated, but they do illustrate the need to step up dialogue and cooperation, as well as validation by means of arms control treaties.

## 2.4 Nuclear Weapons Arsenals and Nuclear Doctrines

There are no official figures on US and Russian stocks of tactical nuclear weapons in Europe because possessor states classify holdings. Experts assume that the USA still deploys 150–200 tactical nuclear weapons at six bases in five European NATO countries (see Table 4). This number is supported by a briefing published by Wikileaks in which a Department of Defense official in September 2009 speaks of 180 US warheads deployed in Europe (see Wikileaks 2010). The USA deploys only B-61 gravity bombs in Europe, of which the US Air Force keeps another 300 in reserve in the USA. Over the next few years, the USA will retire the approximately 260 nuclear warheads for their sea-launched cruise missiles (Tomahawks) (see Kristensen/Norris 2011). Then, the B-61 will be the last remaining type of tactical nuclear weapon in the US nuclear arsenal.

The tactical nuclear weapons assigned to NATO remain under US control during peacetime. In the event of war, under nuclear sharing arrangements, control over some of these weapons can be transferred to allies possessing nuclear weapons-capable delivery systems (dual-capable aircraft). Nuclear sharing was developed during the East-West confrontation in order to ensure a close security coupling between the USA and Europe.

4. The Quadrennial Defense Review Report of 2010 remarks with regard to future PGS capabilities: »enhanced long-strike capabilities are one means of countering growing threats to forward-deployed forces and bases and ensuring U.S. power projection capabilities« (U.S. Department of Defense 2010a: 32f).

5. For the fiscal year 2011 the Pentagon has requested 240 million US dollars for the CPSG Programs.

Table 4: US nuclear weapons in Europe, 2011

| Country | Airbase | Dual capable aircraft | Number of B-61 warheads |
|---|---|---|---|
| Belgium | Kleine Brogel | Belgian F-16 | 10–20 |
| Germany | Büchel | German Tornado | 10–20 |
| Italy | Aviano | US F-16 | 50 |
| | Ghedi Torre | Italian Tornado | 10–20 |
| Netherlands | Volkel | Dutch F-16 | 10–20 |
| Turkey | Incirlik | US fighter aircraft (rotating) | 60–70 |
| **Total** | | | **150–200** |

Source: Norris/Kristensen 2011.

NATO's new Strategic Concept, adopted at the Lisbon Summit in 2010, makes it clear that »deterrence, based on an appropriate mix of nuclear and conventional capabilities, remains a core element of [NATO's] overall strategy« (paragraph 17). The circumstances under which the deployment of nuclear weapons would have to be considered are described as »extremely remote« (paragraph 17).[6] In principle, however, the option of nuclear first-use, even against non-nuclear attacks, is retained (see NATO 2010c). Primarily due to French resistance, the allies were unable to bring NATO's nuclear doctrine in line with the new US doctrine. In April 2010, the USA had renounced the threat or the use of nuclear weapons against non-nuclear weapon states that are parties to the Nuclear Non-proliferation Treaty and in compliance with their non-proliferation obligations (see US Department of Defense 2010b: 15). NATO therefore now has a more permissive nuclear doctrine than the USA, whose nuclear potential is the main pillar of NATO's nuclear deterrent.

A controversial issue in the run-up to the adoption of the new Strategic Concept was whether NATO should condition reductions of tactical nuclear weapons on reciprocal measures by Russia. The central and eastern European states won the day on this point, refusing to agree to unilateral concessions on the part of NATO. The new Strategic Concept states that for »any future reductions« NATO's aim would be to »seek Russia's agreement to increase transparency on its nuclear weapons and relocate these weapons away from the territory of NATO members«. The Alliance emphasises that in the case of »[a]ny further steps … greater Russian stockpiles of short-range nuclear weapons« must be taken into account (NATO 2010c: paragraph 26).

Reliable information concerning the size, storage locations and composition of the Russian arsenal of tactical nuclear weapons is difficult to find. Russian and US experts estimate that Russia possesses about 2,000 operational TNW. Most of these weapons are probably stored in the European part of Russia, with warheads separated from their delivery systems. In addition, Russia probably possesses about 3,000 to 5,000 TNW which are not operational because they are either slated for dismantlement or because they are no longer properly maintained (see, for example, Zagorski 2011).

By its own account, France has no more than 300 warheads (see Sarkozy 2008), almost all of which are likely to be operational. According to independent estimates, around one-fifth of the French arsenal comprises airborne standoff weapons (ASMP, ASMP-A) whose maximum range is between 2,000 and 2,750 kilometres. These weapons would thus be counted as tactical weapons by the USA and Russia. France, however, calls them »pre-strategic«.

The UK has 225 nuclear warheads of which no more than 160 are deployed on sea-launched strategic Trident missiles. The British government has announced that it will reduce by the mid-2020s the number of operational warheads to no more than 120 and the total number of warheads to no more than 180 (see HMG 2010).

6. NATO Strategic Concept 2010, available at: http://www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf

Table 5: Operational tactical nuclear weapons, Russia, 2010

| Armed Service | Number of warheads |
|---|---|
| Air and missile defence | ~700 |
| Air force | 650 |
| Navy | ~700 |
| **Total** | **~2000** |

Source: Kristensen/Norris 2010.

The Russian military doctrine adopted in February 2010 keeps open the option of nuclear first use, but compared to the military doctrine of 2000, the nuclear threshold has not been lowered. »By defining the threat more narrowly, the use of nuclear weapons in large-scale conventional wars has been made more difficult. While hitherto nuclear weapons use was possible in a ›critical situation‹ for Russia, now ›the existence of the state [must be] in danger‹« (Klein 2010: 3f, own translation). Russia has no principle objections to including tactical nuclear weapons in the arms control process but links this to a series of conditions. The US nuclear weapons deployed in Europe, for example, would have to be permanently withdrawn to US territory; agreement would have to be reached with Washington about the construction of a US missile defence system; an arms race in outer space would have to be avoided; and imbalances in conventional forces would have to be reduced before a comprehensive approach to arms control could be realised (Lavrov 2010).

## 2.5 Missile Defence in Europe

At its Lisbon Summit in November 2010, NATO decided »to develop a missile defence capability to protect all NATO European populations, territory and forces« (NATO 2010b: clause 2). At the NATO defence ministers meeting in June 2011 an action plan was approved outlining the next steps towards the construction of an Alliance-wide missile defence capability. Within the framework of the NATO-Russia Council, Russia was invited to participate in ballistic missile defence (BMD). The intention is to »explore [with Russia] the potential for linking current and planned missile defence systems at an appropriate time in mutually beneficial ways« (NATO 2010b: clause 38). So far however, NATO's offers of cooperation have been rather vague and missile defence cooperation with Russia remains primarily a political project.

In the run-up to the discussion on the future Strategic Concept, NATO members debated the introduction of territorial missile defence within NATO with regard to the threat assessment but also with regard to what capacities Allies would have to bring to the table (Rasmussen 2010). NATO's central and eastern European member states came out in favour of the project, while in France and Germany, but also in other NATO states, scepticism prevailed. Romania and Bulgaria had offered to host a BMD radar facilities or even anti-ballistic missiles on their territory. Poland was disappointed that plans for the construction of ground-based interceptors were cancelled, but will now host the land-based version of the Aegis BMD system in 2018. Turkey is willing to host BMD components, but it is reluctant to provoke Iran. But in September 2011 the Turkish government has formally approved the deployment of an early-warning missile defence radar by NATO.

These events clearly show that the debate is concerned primarily with Alliance politics. The Lisbon Document does not mention any concrete threats. The Lisbon Summit Declaration cites the following as test criteria: the extent of the threat, the technical feasibility and the affordability. The costs are expected to be around 800 million euros spread out over 14 years and borne by all NATO states. These figures make sense only if NATO does not acquire its own intercept capabilities and seeks to fuse the Active-Layered-Theatre-Ballistic-Missile-Defence (ALTBMD) network with the European-Phased-Adaptive-Approach (see next section). By way of comparison it should be mentioned that Japan wishes to acquire four Aegis cruisers with BMD capabilities. The cost of the various BMD systems by 2012 in Japan alone will be between 7.4 and 8.9 billion US dollars (see Toki 2009).

Neither the conceptual details nor the funding of the planned territorial NATO missile defence have been determined. The future role of missile defence in relation to the defence alliance's nuclear strategy has not yet been fully clarified, either. The Lisbon concept underlines that missile defence in Europe is intended to supplement deterrence capabilities which are based on »an appropriate mix of conventional, nuclear and missile defence forces« (NATO 2010c: clause 30). In plain terms, this means that missile defence in Europe is intended to safeguard nuclear deterrence and serves as an additional insurance.

### 2.5.1 New US Concept for the BMD Architecture in Europe

For several decades, missile defence has been a central project of successive US administrations, albeit with varying goals and contents (Alwardt/Gils/Neuneck 2011). When Barack Obama became US president in 2008 there was a comprehensive evaluation and re-assessment of the missile threat and of BMD developments of the preceding Bush administration (see Department of Defense 2010b). The outcome of this was a new concept for the future BMD architecture in Europe, the so-called European Phased Adaptive Approach (EPAA), presented by the White House on 17 September 2009. The original plans for a radar station in the Czech Republic and Ground-base interceptor (GBI) silos in Poland, which Russia was particularly averse to, were cancelled. Instead, the Aegis BMD system will form the core of a European BMD component, first of all against short- and medium-range missiles. The Aegis BMD system is ship-based, consisting of radar (SPY1) and type SM-3 interceptors, which are supposed to intercept incoming missiles in midflight or in their final approach.

The official reason given for this re-orientation is, on the one hand, the changed threat perception because of developments in Iran. In fact, Iran is working on new medium-range missiles, but an imminent direct threat cannot be deduced until now. Rather, the USA sees a threat to Allied and US bases in Europe and the Middle East from Iranian short- and medium-range missiles rather than a threat to US territory from intercontinental missiles, the development of which will take years, if not decades, according to the official view. On the other hand, the Obama administration regards the Aegis SM-3 interceptors as technically more mature and more thoroughly tested than the originally planned but so far untested GBI´s interceptors of the George W. Bush´s European missile defence. However, in order to be able to keep up with the continuing development of missile technology in some countries and the corresponding threat scenarios the planned and as yet to be designed European BMD architecture in the long term is intended to enable defence against ballistic missiles with intercontinental range. The EPAA foresees for this purpose the further development of Aegis BMD components in four phases by 2020, accompanied by the gradual supplementing of the system architecture by land-based BMD systems (see Table 6).

In phase 1, by the end of 2011, the stationing of the first sea-based Aegis BMD systems with interceptor SM-3 Block IA is envisaged, supplemented by land-based point-defence systems consisting of Patriot PAC-3 and THAAD (Terminal High Altitude Area Defense). With SM-3 Block I interceptors only short-range ballistic missiles (SRMB) and medium-range ballistic missiles (MRBM) can be intercepted. Tests so far indicate that although it has often hit the target it was successful only against well-known, typical short-range target missiles. By improving the sensor technology of the SM-3 interceptors (Block IB) and further development with regard to speed (Block IIA), in phase 3 from 2018 the Aegis BMD system will finally be enabled in principle to intercept longer range ballistic missiles (Intermediate-Range Ballistic Missiles, IRBM) and with SM-3 Block IIB in phase 4 to intercept intercontinental missiles (ICBM). This will be possible mainly because of better detection, deployment near to the target and the higher terminal velocity of the interceptors.

Table 6: The four phases of the European Phases Adaptive Approach

| Phase | Introduction | Systems | Stationing (Aegis) | Combatable threat |
|---|---|---|---|---|
| **I** | 2011 | Patriot, THAAD, FBX<br>Aegis SM-3 Block IA | Mediterranean, Baltic?<br>Black Sea? | SRBM / MRBM |
| **II** | 2015 | + Aegis SM-3 Block IB | Land-based in Northern and Southern Europe, Romania | SRBM / MRBM |
| **III** | 2018 | + Aegis SM-3 Block IIA | 3–4 locations, two on land (+ Poland) | SRBM / MRBM / IRBM / (ICBM) |
| **IV** | 2020 | + Aegis SM-3 Block IIB | Possibly only two locations on land | SRBM / MRBM / IRBM / ICBM |

Source: Alwardt/Gils/Neuneck 2011: 347.

Furthermore, in phases 2 to 4 land-based versions of the respective SM-3 variants will be stationed, probably in Romania and Poland, thereby enabling interceptor deployment regardless of the weather. If expectations concerning the performance of the SM-3 interceptor are fulfilled, the USA assumes that in phase 4 defence against ballistic missiles from the Middle East – which are directed towards Europe or the USA – will require only two SM-3 Block IIB locations on land in order to guarantee geographical coverage of Europe (see Neuneck et al. 2010).

The Missile Defense Agency (MDA) indicates that the Aegis BMD system's SM-3 interceptors have had 17 hits in 21 tests since 2002. Furthermore, in February 2008 a defunct satellite was successfully shot down in orbit, which underlines the anti-satellite potential of the Aegis BMD system. Tests of the Aegis BMD so far, however, like those of the strategic GMD system of the George W. Bush administration, have been conducted under unrealistic conditions. Tests were successful against short-range missiles, but not against medium-range ones and individual warheads (see Gilmore 2010). The countermeasures that an enemy can implement to mislead the BMD system have not been included so far. The Aegis system can therefore not be regarded as having been tested successfully and has merely a potential interception capability with regard to the assumed threat.

### 2.5.2 Discussions with Russia and Possible Solutions

Within the framework of the meeting of the NATO-Russia Council (NRC) in Lisbon Russia was also invited to participate in the NATO missile defence project. Like China, Russia has long been opposed to US missile defence plans, but since the days of the arms race it has capabilities of its own, for example a nuclear armed anti-ballistic missile system (ABM system) to protect Moscow and S-300 and S-400 missiles comparable to the Patriot. Before the Georgian war Russia and NATO had held joint BMD exercises. Russian President Medvedev, who participated in the meeting of the NRC in Lisbon, has accepted the offer of further talks and studies in principle, but linked to conditions such as equal partnership and transparency (see Medvedev 2010). Since then, informal talks have been held, in particular between the Obama and Medvedev administrations, with military and expert participation. The NRC was tasked with comprehensively examining the future framework of cooperation with regard to missile defence. Concrete results of these talks are not known. The immediate resumption of cooperation in the area of tactical missile defence was agreed on, having been interrupted in 2008 because of the Georgian war, and the working out of a joint threat analysis in relation to ballistic missiles. Considerable differences remain with regard to assessments of the Iranian missile programme.

Russia would like, on the one hand, to prevent the construction of a significant BMD capability in Europe that one day could challenge its strategic arsenal; and on the other hand, they have an interest in protecting their own territories, as an equal partner, against missiles from the Middle East (sectoral approach). NATO, however, does not want to make itself dependent on Russian capabilities and is developing an independent BMD system. The construction of tactical missile defence for the Euro-Atlantic area could take place in a number of phases, however. Russia has radar installations in Gabala (Azerbaijan) and Armavir (Russia) which cover large parts of the Middle East and whose data considerably increase the early warning time for NATO and the USA. Continuous data exchange and a joint data centre could form the basis for building a joint early warning system against missile launches from the Middle East. In a crisis, Aegis ships could also enter the Black Sea to protect substantial parts of Russia. Depending on the actual threat a protection system for Russia and Western Europe could be built up step by step. Limiting the number of interceptors to be stationed – in particular, the more efficient type SM-3, phases III and IV – would be another step that would accommodate Russia (See Barzashka 2011).

## 3. The Perspectives of NATO States: From Nuclear Deterrence to Conventional Reassurance

It is clear to the governments of the USA and many European NATO members that the current form of nuclear deterrence, which is still based on the threat of comprehensive nuclear retaliation, increasingly has more disadvantages than benefits. As George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn argued recently, switching to a safer and more stable form of deterrence would be an important precondition for further progress towards a nuclear-weapon free world. At the beginning

of March 2011, the four American »wise men« wrote: »The U.S. and its NATO allies, together with Russia, must begin moving away from threatening force postures and deployments, including the retention of thousands of short-range battlefield nuclear weapons. All conventional deployments should be reviewed from the aspect of provocation« (Shultz et al. 2011). The US Nuclear Posture Review Report adopted in spring 2010 assigns much less significance to nuclear weapons (US Department of Defense 2010b).

To date, NATO as a whole has avoided such a fundamental re-evaluation of the role of tactical nuclear weapons and of its conventional force posture. Allies were engaged in a controversial debate in the run-up to adoption of the Strategic Concept in November 2010. This debate revolved around the relationship between nuclear and conventional deterrence, the importance of US tactical nuclear weapons in Europe and the relationship between missile defence systems and NATO's nuclear posture. However, the compromise reached at the Lisbon Summit on the role of nuclear weapons is essentially conservative.

In its new Strategic Concept, NATO continues to base deterrence on nuclear and conventional capabilities and retains its nuclear first-use option. For the first time, the Alliance welcomes the goal of a nuclear weapons-free world, but at the same time makes it clear that »as long as there are nuclear weapons in the world, NATO will remain a nuclear Alliance«. Further disarmament steps with regard to tactical nuclear weapons are linked to reciprocal Russian steps. The decision to build a new joint missile defence system to protect »populations and territories against a ballistic missile attack« as a »core element« of collective defence is a new element of NATO defence policy (NATO 2010c: paragraph 19, see Katsioulis 2010).

Within the framework of a comprehensive Deterrence and Defence Posture Review NATO members will continue to discuss »the range of NATO's strategic capabilities, including NATO's nuclear posture, and missile defence and other means of strategic deterrence and defence« (NATO 2010b: 14f). By the next summit in May 2012 the member states are supposed to reach agreement on a report on the future relationship between nuclear and conventional deterrence, including the contribution of a strategic missile defence system to deterrence.

A new fundamental consensus on future capabilities NATO will need for a credible deterrence policy is a precondition for a more active disarmament and non-proliferation policy by the Alliance: without such an agreement NATO will not be able to define which military capabilities it wants to include in arms control. Merely continuing the current status quo-oriented policy would intensify the crisis facing conventional arms control in Europe.

## 3.1 USA: The Difficult Farewell to Nuclear Deterrence

Since the end of the East-West conflict, the USA has struggled to adapt its colossal nuclear deterrence capacity to the new international situation. Conceptually, Washington changed direction towards a reduced role for nuclear weapons in deterrence long ago. Even the National Security Strategy adopted by the George W. Bush administration contains the insight that the nuclear arsenals created during the Cold War are inappropriate for the new international situation (see The White House 2002: 15). The Obama administration wants to reduce the role of nuclear weapons in regional deterrence scenarios in favour of missile defences and conventional long-range precision weapons (see Kristensen 2010). A clear sign of this trend is the extension of negative security guarantees to all non-nuclear weapon states that are parties to the Nuclear Non-proliferation Treaty and in compliance with their non-proliferation obligations, as well as the aspiration to revise the US declaratory policy to cover only the deterrence of other nuclear powers, at some point in the future (see US Department of Defense 2010b: 15; see also Section 2.4).

In contrast to his predecessor, President Obama has changed US policy on two decisive points, in order to increase the credibility of his disarmament policy, whose goal is a world free of nuclear weapons:

1. Washington has raised the threshold for the use of nuclear weapons. President Obama has halted programmes for the development of new kinds of nuclear weapons which could be used either in regional scenarios or to roll back the proliferation of weapons of mass destruction. The option of (nuclear) »pre-emptive strikes« against the WMD programmes of other states, put for-

ward under George W. Bush, no longer appears in US security doctrine.

2. The deployment of a European component of the US missile defence system will no longer take place on the basis of bilateral agreements with the country which would host the missile defence facilities but within NATO structures. The goal is not only to reach agreement within NATO on a joint missile defence project but also to win over Russia as a partner, thereby smoothing the path to the continuation of bilateral nuclear arms control.

Even though the Obama administration promotes nuclear disarmament, Washington has no intention of giving up its global military supremacy. US capabilities to project military power will therefore increasingly be ensured via the modernisation of conventional capabilities and the construction of missile defence systems. The potentially counterproductive effects of conventional force modernisation – for example, within the framework of (Prompt) Global Strike (see Section 2.3) – on strategic stability between the nuclear powers and thus on the goal of nuclear disarmament are rarely discussed in the USA. Such a debate, if takes place at all, is limited to a few experts (Gormley 2009; Gerson 2009).

In the preamble to the New START treaty, the parties recognise the existence of the interrelationship between strategic offensive arms and strategic defensive arms and acknowledge that this interrelationship will become more important as strategic nuclear arms are reduced (see New START 2010). In the negotiations on the New START treaty Russia originally urged a comprehensive ban on conventional strategic systems. Moscow's demand was not accepted but conventional and nuclear-armed strategic missiles now both count against agreed limits for launchers. At the same time, the US administration assured Congress during the ratification process that the New START treaty will not affect US PGS and missile defence plans (see Gottemoeller/Miller 2010).

Even more than the George W. Bush administration, the Obama administration is trying to present the US missile defences as protection against attacks from Iran (and not from Russia). The intention is to convince Moscow that defensive capabilities planned under the European Phased Adaptive Approach cannot put Russia's second-strike capabilities at risk. Even under conditions of nuclear disarmament, the USA aims to give credible security guarantees, not least to prevent US allies from seeking nuclear weapons of their own (US Department of Defense 2010b: 15).

## 3.2 The Significance of Burden-sharing for Central Europe

For many central and eastern European member states, the credibility of the collective security guarantees in Article 5 of the NATO Treaty is crucial. The policy of the Obama administration, which is to take greater account of Moscow's security interests within the framework of a »reset« of bilateral relations with Russia, worries the countries in the region. President Obama emphasised in his Prague speech on 5 April 2009 that Washington's nuclear disarmament initiative would not lead to a weakening of US security guarantees. However, in particular Washington's renunciation of the Bush administration's missile defence plans has given rise to concerns in central and eastern Europe that the USA is too ready to compromise with Russia. In July 2009, a number of former central and eastern European statesmen and -women complained about this in an open letter to President Obama: »NATO today seems weaker than when we joined. In many of our countries it is perceived as less and less relevant – and we feel it. Although we are full members, people question whether NATO would be willing and able to come to our defence in some future crisis. … We want to ensure that too narrow an understanding of Western interests does not lead to the wrong concessions to Russia.« (Open Letter 2009)

The defence policy of many central and eastern European NATO allies is essentially conservative. These countries continue to rely on the traditional instruments of security policy, such as nuclear deterrence and credible capabilities for territorial defence, because they believe that this is the best way deter a Russia which still harbours ambitions of regional hegemony. These states were taken unawares by the debate on withdrawal of the US nuclear weapons deployed in Europe. Only after the advocates of withdrawal and the USA had made it clear that there would be no changes to the Alliance's deterrence posture without the active agreement of the new NATO members, did individual states engage in the debate on a reform of nuclear sharing arrangements (see Kulesa 2010).

The central and eastern European countries continue to feel threatened by Russia's conventional forces and tactical nuclear weapons. The Georgian war, Russian manoeuvres in the Baltic region, which practiced even the deployment of nuclear weapons, and Moscow's threat to counter the stationing of components of US missile defence with the deployment of short-range missiles in Kaliningrad have intensified concerns particularly in the Baltic states about Russia's military policy. From the perspective of the central and eastern European states, therefore, conventional and nuclear disarmament must be pursued together. From an Eastern European standpoint, it is especially problematic that in 1997 NATO issued politically binding pledges to Moscow to strictly limit the presence of US troops and NATO infrastructure (»no substantial combat forces«) and not to deploy nuclear weapons on the territories of new member states.[7]

For the central and eastern European states, arms control plays at best a subordinate role in relation to Russia. For example, the Baltic states were only prepared to support the US »reset« policy vis-à-vis Russia after NATO had developed new contingency plans for the defence of the three Baltic states which provided for substantial forces in such a scenario (see Traynor 2010). Accordingly, at the meeting of NATO Foreign Ministers in Tallinn in April 2010, Secretary of State Hillary Clinton declared that NATO must broaden deterrence against the range of 21st century threats, »including by pursuing territorial missile defense, conducting Article 5 training and exercises, and drafting additional contingency plans to counter new threats to the Alliance« (See Clinton 2010). The Baltic states are also not willing to accept demands by Russia to limit their conventional capabilities by acceding to the CFE Treaty.

Against this background, the deployment of US missile defence installations in Europe is regarded by many new Alliance members as a tangible, significant and permanent proof of US solidarity with the Alliance. Although no one publicly contradicts the US position that the purpose of the strategic missile defence system is solely defence against an attack involving Iranian missiles, in fact US missile defence plans are regarded primarily as an insurance against Moscow. There is some willingness to address Russian concerns about missile defence plans through security and confidence building measures but the new NATO member states clearly reject an equal partnership with Moscow which would give the latter access to NATO missile defence information sharing and decision-making structures. In keeping with this, many central and eastern European states insist that NATO disarmament steps must take place on the basis of a quid pro quo with Russia. The new NATO members were adamant that in the new Strategic Concept NATO should consider steps to reduce tactical nuclear weapons only if Russia reciprocated.

In comparison to the policy of the central and eastern European states, Turkey's attitude to the Alliance's future deterrence and defence posture is ambivalent. Recep Tayyip Erdogan's government is performing a difficult balancing act. On the one hand, Turkey would like to remain anchored in NATO and thus also participates in nuclear sharing. This is viewed as a symbol of transatlantic burden sharing (see Kibaroglu 2011). On the other hand, Turkey is endeavouring to defuse conflicts in the Middle East. Ankara wants to establish itself in the region as mediator between Western and Islamic states. Along these lines, Ankara insisted on a say in relation to the operation a missile defence radar installation on Turkish soil. Turkey links a reform of the CFE Treaty, among other things, on assurances that the regulations on the stationing of forces in flank regions would not be changed to such an extent that Turkey's security would be impaired (see Zellner 2009).

## 3.3 Western Europe: Deterrence and Cooperative Security

For most »old« NATO member states, the credibility of extended deterrence lost significance after the end of the East-West conflict. One indication is the fact that US expanded negative security guarantees were welcomed in most Western European capitals. The conservative-liberal government in London has taken over these guarantees in its own nuclear doctrine almost unchanged (see HMG 2010: 37f). Many Western Europeans basically support the US vision of a nuclear weapons-free world, as well as Washington's commitment to strengthen the Nuclear

7. The Founding Act on Mutual Relations, Cooperation and Security between NATO and the Russian Federation, signed on 27 May 1997 in Paris, states: »NATO reiterates that in the current and foreseeable security environment, the Alliance will carry out its collective defence and other missions by ensuring the necessary interoperability, integration, and capability for reinforcement rather than by additional permanent stationing of substantial combat forces. Accordingly, it will have to rely on adequate infrastructure commensurate with the above tasks« (NATO 1997). The NATO member states also guarantee that »they have no intention, no plan and no reason to deploy nuclear weapons on the territory of new members« (NATO 1997).

Non-Proliferation Treaty. It is therefore not surprising that Germany, together with the USA, supported the creation of a Weapons of Mass Destruction Control and Disarmament Committee in NATO (see Meier 2011).

France stands alone in Western Europe by rejecting further nuclear disarmament and is blocking a reform of NATO's nuclear weapons policy. Paris fears that the debate on a nuclear weapons-free world could weaken the significance of the *Force de Frappe.* France is facing a dilemma, because it is the only NATO member that does not participate in the Nuclear Planning Group. This policy is supposed to demonstrate the independence of the French nuclear deterrent, but it also limits opportunities to influence NATO's nuclear weapons policy. During debates in NATO on the mandate of the Deterrence and Defense Posture Review and on the disarmament committee, Paris swung back and forth between fundamental opposition and a wish for participation and involvement in these processes (see Zajac 2011; Tertrais 2009).

The German Foreign Minister Guido Westerwelle has warned on more than one occasion that nuclear disarmament must not re-open the possibility of conventional wars (see Westerwelle 2010a). This raises the question of stability in a world in which there are few or no nuclear weapons. France in particular uses concerns about international stability as an argument for delaying disarmament steps of its own. France stresses that nuclear disarmament will be possible only when the security situation has improved. The USA acknowledges this argument to the extent that it insists that NATO cannot renounce nuclear weapons as long as there are nuclear weapons in the world (see Clinton 2010).

In strategic areas of advanced military technology, NATO continues to rely on US capabilities. Debates on the arms control policy implications of new conventional capabilities are taking place, if at all, bilaterally between Moscow and Washington. Senior NATO officials constantly complain that the defence technology gap between Europe and the USA impairs the Alliance's operational capabilities but up to now the European Allies have been unable or unwilling to close this gap. As a result, a serious discussion of the effects that NATO's own PGS capabilities might have on the Alliance's deterrence posture has yet to take place.

Some NATO member states are worried about the implications for conventional arms control of a NATO-wide missile defence system. Up to the NATO summit in November 2010, officials in Berlin emphasised concerns that the creation of such a system could frustrate efforts to engage Russia and thus could put at risk attempts to rescue the CFE regime. Foreign Minister Westerwelle justified Germany's policy reversal towards support for a strategic missile defence system in the Bundestag in November 2010 on the grounds that the plan had taken on a »completely new direction« because it was now being pursued with Russia. Westerwelle described the inclusion of Russia as »particularly important«: »We do not want zones with different levels of security in Europe« (Westerwelle 2010b). However, Westerwelle left open the question whether Germany's support for a missile defence system would end if Moscow did not take up NATO's offer for cooperation.

In Western Europe, there are two positions on the relationship between nuclear deterrence and missile defence. While some believe that constructing a missile defence system promotes nuclear disarmament, others see the danger of a new arms race (see Thränert 2009). Germany argued in the run-up to the adoption of the new Strategic Concept that the creation of a strategic missile defence system could facilitate the withdrawal of US nuclear weapons deployed in Europe because the missile defence system could take over at least some of the political functions of nuclear sharing, such as burden sharing and strengthening of alliance solidarity. France, by contrast, argued that a NATO missile defence system at best could have a »complementary« function with regard to nuclear deterrence (see Meier 2010).

## 3.4 Where Next for NATO?

As the leading power, the USA sets the tone and the pace of debates in NATO on the reform of its deterrence and defence posture. The government in Washington is urging incremental reductions of the role of nuclear weapons in NATO's defence posture. Instead, longer-range technologically advanced conventional forces and missile defence capabilities are supposed to ensure the power projection capabilities. As far as possible, this reorientation is to take place not only with the support of the other Allies, but also with the agreement of Russia. The Obama administration regards this revision of deter-

rence as an important building block in its project of a nuclear weapons-free world: it hopes that in this way it will be able to reduce the importance of nuclear weapons in general, but particularly in US–Russian relations.

Only to a limited degree are NATO Allies willing or in a position to support the reorientation of US defence policy. The central and eastern European countries, because of their geographical situation and history, are interested primarily in credible NATO security guarantees. They regard the debate on a reorganisation of NATO's deterrence posture and the attempts by some Western European states to involve Russia more closely in European security structures with scepticism. Many »old« NATO members support Obama's policy of a »reset« in NATO-Russia relations but fear that plans to construct a missile defence system could undermine an engagement policy. France, by contrast, is sceptical, even dismissive of the project of a world free of nuclear weapons and is blocking a reform of NATO's nuclear weapons policy. At the same time, Paris is continuing to refuse to bring its own nuclear arsenal into the Alliance.

Washington has not yet developed a clear position on how it hopes to resolve these conflicts. In the American view, the Deterrence and Defense Posture Review and the Weapons of Mass Destruction Control and Disarmament Committee should be the institutions in which NATO coordinates its positions on issues of nuclear and conventional disarmament. In particular, the Alliance should clarify its position with regard to the arms control agreement Washington is seeking with Russia on a reduction of tactical nuclear weapons (see Pifer 2011). It seems clear that the Obama administration will have to lead if it wishes NATO to develop a coherent position on this issue.

## 4. The Russian Perspective: Claim to Strategic Parity

Nothing shapes Russia's security perceptions more strongly than the conflict between its claim to strategic parity – recognition as an equal partner – and the real asymmetries that exist in terms of politics, the economy and conventional forces. This claim to parity is oriented primarily towards the USA and »the West«. Recently, however, China has come on the scene as a complicating factor. It is remarkable in this contest that the bulk of Russia's security policy proposals – for example, President Medvedev's proposal for a European Security Treaty – concern OSCE Europe and (as yet) do not systematically include the existence of China as a security policy actor. However, signs are increasing in the Russian security literature that this is beginning to change: China's »shadow over Russia has grown larger and thicker« (Trenin 2010c).

Parity is being sought on two levels: a narrower military level, concerning relative strength and corresponding strategies, and a psychological-political level that involves esteem and recognition of Russia's status and role as a great power (see Larson/Shevchenko 2010). On the military level, the Russian leadership is seeking to maintain nuclear parity with the USA and to make good its conventional inferiority – which is growing because of its technological lag – in particular by means of tactical nuclear weapons. On the psychological-political level Russia wants to be included as equal partner in the major global decision-making processes. Although this level encompasses far more than military considerations, nevertheless, the nuclear element looms large because nuclear weapons are the only area, besides its energy resources and sheer size, in which Russia can claim great power status and thus parity. This is why nuclear weapons are tasked with making up for weaknesses in other, also non-military areas:

> »Russia will be forced to increasingly rely on nuclear weapons in its military-political strategy to prevent major conflicts, to deter proliferators and conventional arms build-ups in pursuit of supremacy, to curb the arms race in the sphere of missile defense in order to make it senseless, and lastly, to preserve its political status in a situation when the country's economic positions will get weaker (…). To this end, Russia will have to carry out a fundamental modernization of its nuclear potential.« (Karaganov 2010a)

The parallel existence of military and psychological-political levels also explains the contradiction between Russian perceptions of a US threat and the desire for US recognition as an equal and to cooperate with it. One example of this is the attempt by then President Putin, immediately after the terrorist attacks of September 2001 to form an anti-terrorist coalition with the USA and thus to achieve »great power status through partnership with the United States« (Larson/Shevchenko 2010: 88).

This section is limited to examining Russian perceptions of military relations on the nuclear strategic, nuclear tactical and conventional levels, as well as with regard to (further rounds of) NATO expansion. It relies primarily on the views of experts who can express themselves more openly with regard to the motives of Russian security policy than the Russian government.

## 4.1 Strategic Nuclear Weapons: Significance of New START

Since strategic parity with the USA constitutes the core of Russia's claim to be a great power any attempt to undermine it, or what is perceived as such, is viewed with great concern: »The key problem – I would even call it existential – that creates a rift between Russia and the U.S. are attempts by Washington to deprive Moscow of the missile-nuclear parity from the Soviet era« (Dubinin 2008). This relates in particular to US plans to construct a strategic missile defence system and the termination of the ABM Treaty. The US government has the right to withdraw from the Treaty, »but for Russia it was a shock. It was the first time that a superpower withdrew from an arms control treaty« (Arbatov 2010a). Consistent with this, the limitation of offensive strategic nuclear weapons by the New START Treaty is viewed as progress in Russian expert circles, but not as a decisive breakthrough in strategic relations with the USA:

> »START is good, but, alone, it is not good enough. No amount of strategic arms reduction is capable of altering the nature of the U.S.–Russian strategic relationship, which is basically unchanged from the years of the Cold War. (…) If one looks for a game-changer, which can replace that pattern, it is cooperation on missile defenses.« (Trenin 2010a: 3)

In this context, what concrete significance should be attributed to New START is a controversial issue among Russian experts. While Alexei Arbatov welcomes the Treaty (see Arbatov 2010a), according to Sergei Karaganov at best its significance is political-symbolic: »Russia agreed to the ›resetting‹ by means of a new treaty. The parties have signed, and, hopefully, will ratify it. But in general, the document will not resolve any major problem these countries or the international community are facing« (Karaganov 2010b). Underlying this are differences in the evaluation of the relative significance of strategic nuclear weapons. In 2009, Karaganov warned against lowering the ceilings for strategic nuclear weapons too much (see Karaganov 2009: 17), while Arbatov cautions against attaching too much importance to the role of nuclear weapons: »One should not forget that the Warsaw Pact and the Soviet Union broke up when they had five to seven times more nuclear weapons than Russia has now« (Arbatov 2010b: 174). The most far-reaching position is that of Dmitry Suslov, who criticises the goal of nuclear strategic parity as delusional on the part of the Russian leadership, leading to unduly high government spending and growing tensions with the USA. Instead, in the form of »minimal reasonable sufficiency« (Suslov 2010) Suslov is proposing a new guiding principle for an alternative Russian nuclear strategy. To be sure, this is very much a minority position in the Russian strategic community, in which nuclear strategic parity is barely questioned. Against this background it is clear that the Russian government's declaration of support for Global Zero – Foreign Minister Lavrov: »we see our ultimate goal in building a world free of nuclear weapons« (Lavrov 2010: 16) – should be taken with a pinch of salt. One of the most important questions is the effect of conventional long-range missiles on strategic stability: »This highly serious problem is, in our view, linked to some obvious destabilizing factors. The main such factor is the so-called nuclear uncertainty – i.e. the impossibility of identifying the type of ballistic missile (nuclear or conventionally armed) after their launch« (Lavrov 2010: 12).

## 4.2 Tactical Nuclear Weapons Are Still Needed for Deterrence

In Russia, tactical nuclear weapons are still regarded as compensating for the weaknesses of its conventional forces. This applies in particular to long-range ballistic and cruise missiles, some of which are armed with munitions guided from space (see Zagorski 2011: 23). The ultimate threat scenario, scarcely perceived in the West, concerns the fact that NATO forces could deal with Russia in the same way they dealt with Serbia in 1999: »After NATO planes bombed Belgrade, it is difficult to convince anyone in Russia that Moscow or St. Petersburg are immune from similar attack« (Dubinin 2008). Only nuclear weapons could protect the country against such incursions: »After the attacks on non-nuclear Yugoslavia and Iraq, which went unpunished, it became plain hypocrisy that it would be the best for the states that feel en-

dangered not to acquire nuclear weapons« (Karaganov 2010b). In particular, tactical nuclear weapons are supposed not only to deter conventional attacks, but also to help bring them to an end by means of so-called nuclear de-escalation strikes:

> »[P]rovided that nuclear deterrence has not worked and Russia has been attacked by conventional means, nuclear weapons should be regarded not only as a means of defeating the enemy but, first of all, as a means of forcing the opponent to de-escalate military confrontation. For this, the de-escalation posture anticipates the use of nuclear weapons either for demonstrative purposes (…), or to directly attack the opposing forces. (…) this mission should be assigned explicitly and exclusively to TNW in order to avoid the risk of uncontrolled escalation to a large-scale nuclear exchange.« (Zagorski 2011: 24/25)

Russia has thus adopted a doctrine comparable to NATO's old strategy of »flexible response«, going against the principle maintained for decades that a nuclear war cannot be limited (see Zagorski 2011: 25).

Interestingly enough, Russian nuclear strategists do not have only the USA in mind when thinking about deployment options for tactical nuclear weapons. Andrei Zagorski cites General Vladimir Ostanko, head of the Russian General Staff's Center for Military-Political Studies, as follows (2005):

> »Despite a current stable relationship between the Russian Federation and [PR China], old suspicions about large-scale armed non-nuclear conflict between the two countries have not disappeared (…) Prevention of such conflicts by political methods only (…) or by conventional forces may be inefficient. Because of the Chinese factor, Russia's policy is to be founded on nuclear weapons.« (Zagorski 2011: 27).

Karaganov's arguments are along the same lines: »Were it not for the powerful nuclear (especially tactical) armaments, many in Russia would be alarmed over the growing potential of the Chinese general-purpose armed forces« (Karaganov 2010b). To date, there has been far too little awareness in the West of this twofold frontline which is increasingly discernible in the Russian expert debate.

Given the importance attached to tactical nuclear weapons in Russia's strategic thinking it is not surprising that »there are virtually no significant Russian constituencies with a vested interest in reducing or limiting TNW« (Zagorski 2011: 6). Although the Russian Foreign Ministry does not rule out negotiations on tactical nuclear weapons there would be so many conditions that success can virtually be ruled out. These conditions include a continuous process of nuclear disarmament, which would eventually include all nuclear weapons states, prohibiting the militarisation of space and containment of the stationing of conventional long-range missiles (see Zagorski 2011: 11), as well as the withdrawal of all tactical nuclear weapons to the territory of the possessor states and the elimination of all tactical nuclear weapons infrastructure on the territory of European NATO states (see Lavrov 2010: 18). The great majority of Russian experts have come out against any negotiations on tactical nuclear weapons, sometimes very clearly. Karaganov, for example, talks of the »very risky idea (...) of entering into artificial and extremely unfavorable talks over the reduction of tactical nuclear weapons in Europe, which are not a great hindrance to anyone, and, on the contrary, work as a psychologically stabilizing factor« (Karaganov 2010c). Positions like that of Zagorski (see Zagorski 2011), who in a difficult overall situation seeks starting points for the containment of tactical nuclear weapons by means of arms control, are the exception.

### 4.3 Conventional Forces: Restoring Equilibrium with NATO

The anxiety in the Russian strategic community with regard to long-range missiles armed with precision munitions is much greater than with regard to the traditional offensive weapons limited by the CFE Treaty, such as tanks, armoured combat vehicles, artillery, combat aircraft and attack helicopters. As far as the CFE Treaty is concerned, Russia's aim is to limit NATO states' strategic capabilities while retaining its own strategic capabilities, as well as restoring a kind of equilibrium with the NATO states. This is served by the scarcely negotiable rejection of the so-called »flank rule«, a regional ceiling which in particular limits Russian forces in the Caucasus, as well as the demand for a lowering of the ceilings of the NATO states and for a definition of so-called »substantial combat forces«, which NATO does not intend to station in its central European accession states. These and other

demands are already contained in a document of the Russian President of 14 July 2007 which marked out the political framework for the suspension of the CFE Treaty by Russia in December 2007 (see Putin 2007).

It remains open whether and to what extent Russia proposes to satisfy its interests in conventional arms control within the framework of a modernised CFE regime. The corresponding exploratory talks involving the 30 CFE Treaty states and the six new NATO states (making 36 states in all) failed because of disagreement on two important issues. On the one hand, although Russia basically recognises the principles of host nation consent, according to which the stationing of foreign forces can take place only with the express willingness of the host country, it is not prepared to apply it to Abkhazia and South Ossetia or to have the troops stationed there called into question in any way. On the other hand, Russia is unwilling to accommodate the NATO states' demand for more transparency and to make available data on its conventional forces, certainly below the level of the CFE information exchange. In case of the failure of the CFE regime there are indications that Russia could try to negotiate on the issue of the definition of »substantial combat forces« in the NATO-Russia Council, where it arose.

## 4.4 NATO Enlargement Perceived as a Threat

Probably the most important single problem with regard to Russia's relations with NATO is the latter's constant enlargement, which in 2008 was on the brink of including non-Baltic post-Soviet states, namely Georgia and Ukraine. Karaganov, who is imputed to be in Prime Minister Putin's camp, has spoken in drastic terms of the »logic of NATO's infinite expansion which, if not stopped, would inevitably bring about a big war – not in Georgia but around Ukraine, almost in the heart of Europe« (Karaganov 2009). And even Dmitri Trenin, the liberal minded director of the Carnegie Moscow Center, has written that in the case of a Membership Action Plan for Georgia and/or Ukraine »relations between Russia and the West would have shifted from a diplomatic stand-off to active political and ›special services‹ warfare, which would inevitably lead to open and direct conflict« (Trenin 2009: 143). While a number of Russian experts consider the actions of Russian forces in the Georgian war of 2008 to be justified (see Lukin 2008) Arbatov asks whether this precedent, if that is what it is, could usher in a new phase of post-Soviet disintegration, with possible violent conflicts in, among other places, Ukraine, between Russia and Kazakhstan concerning its Russian-speaking population in the north-western provinces and between Armenia and Azerbaijan about Nagorno-Karabakh (see Arbatov 2008).

To many in the West, after the 2008 Georgian war there can be no question that an enlargement of NATO to include post-Soviet countries would seriously threaten European stability and thus be diametrically opposed to its declared aims. In contrast, the implications of admitting Russia to NATO, as is constantly being proposed by retired diplomats, army officers and politicians, are understood less well in the West than in Russia, where China's interests are always taken into account. On China's probable perception of NATO membership for Russia Trenin has written: »Russia's membership in NATO would be accepted very coolly in China, which would probably view this as the final stage of its geopolitical encirclement by the United States and its NATO allies« (Trenin 2010b) (see Section 1.1 above). This makes it clear that Russia's upcoming inclusion in security policy decision-making structures in the Euro-Atlantic area means that the China factor can no longer be denied.

## 4.5 Main Problem and Conclusions

The main problem with regard to security policy dealings with Russia and the related arms control issues lies in the latter's political, economic and conventional military weaknesses. Russia wishes to make up for these with nuclear weapons until it catches up in terms of conventional forces (which is unlikely ever to happen) or if the technologically superior USA renounces the military use of this superiority, which is simply not feasible. This does not mean that nuclear arms control is not possible (look at New START), but rather that Russia will view all radical nuclear disarmament prospects (Global Zero) sceptically. The situation is exacerbated by the circumstance that NATO's active expansion policy has driven Russia into a corner and also that China's rapidly growing weight means that steps that would have been possible 20 years ago, such as Russia's admission to NATO, are now no longer an option.

It is therefore difficult to see how the security and disarmament policy problems with Russia can be solved

on the level of security and disarmament policy alone. What is needed instead is to put this set of problems in a larger framework, thereby also demilitarising it. This concerns the necessary modernisation of Russian society and economy which will scarcely be possible without external partners. Thus a »modernisation partnership« between Russia and the West is becoming the key condition of Russia's permanent integration in a »Euro-Atlantic and Eurasian security community« (OSCE 2010: 1).

## 5. Prospects for Arms Control in Europe: Solving the Crisis Step by Step?

Twenty years after the end of the East-West conflict, the military capabilities of NATO and Russia still far exceed what would be required for their own security. The arms policies of both sides tend to be based on worst-case thinking, bureaucratic inertia and continuing adherence to obsolete concepts of deterrence rather than on a sober analysis of current security needs. Many programmes for the modernisation of existing weapons systems or for new military capabilities are not only unnecessary but dangerous. By triggering or exacerbating new arms races they would not create more but actually reduce security. Current plans for the development of advanced long-range conventional weapons are one example for the risks associated with new weapon systems.

From a peace-policy perspective, many starting points for disarmament measures and arms control agreements exist. Given the state of the political debate in NATO and in Moscow, however, it is unlikely that really meaningful proposals – such as abandonment of plans for a strategic missile defence system in NATO – will be seriously considered. Instead, in the short- and medium-term arms control can only be expected to promote and support a process of political engagement between NATO and Russia. Progress in one or more specific arms control issue areas could then have a positive impact on other issues and thus help bring about a climate in which more comprehensive disarmament steps become possible (see Diakov et al. 2011).

### 5.1 Functions of Arms Control

The first task of arms control under these circumstances is to reduce mistrust by creating more transparency and reliability. In particular, this involves salvaging the verification instruments established within the framework of the CFE regime and continuing to use them, even if the Treaty fails. In the nuclear domain, it is essential to successively extend existing verification measures for strategic weapons to tactical weapons.

The second task of arms control is to promote cooperation so that military capacities are no longer perceived as threatening. This primarily concerns missile defences. Should it be possible to reduce the confrontational character of missile defences through practical cooperation, such as the exchange and joint analysis of early warning data, this could smooth the way for arms control progress in other areas. Where such cooperation is not possible, moratoriums could help to ensure that conflicts do not escalate. As the militarily stronger partner, NATO has a particular responsibility to contribute to détente through unilateral concessions.

Thirdly, conflict potential should be reduced through qualitative and quantitative limits on weapons systems. Agreed limits on weapons systems, but also close technological cooperation can hinder or prevent the deployment of weapons systems against one another.

Fourthly, treaty-based prohibitions of those weapons systems which no longer serve any defence purpose are required. Should it be possible to mutually agree on the elimination of such weapons, peace dividends could boost domestic support for a policy of engagement. In 1987, a breakthrough of this kind occurred with the ban on medium-range nuclear forces within the framework of the INF Treaty, which heralded the end of the political East-West conflict. It is a historical irony that NATO and Russia seem further away from such a comprehensive arms control measure than they were 25 years ago.

### 5.2 NATO and Russia: Disparate Arms Control Concepts

Unless political relations between NATO and Russia improve, significant and lasting progress on arms control in Europe will be difficult to achieve. The two sides' interests and agendas, not to mention their military capabilities, differ too widely. Instead, there are fears that there will be new arms races if it turns out to be impossible to develop a joint understanding of a future European security

structure. Such rivalry is a particular threat with regard to missile defence, advanced long-range conventional weapons and subregional conflict scenarios.

As it did during the East-West conflict, arms control can promote a process political engagement by creating trust in the other side's reliability and by increasing domestic political support for a policy of détente by reducing arms expenditures. However, the current arms control policies of NATO and Russia scarcely overlap with regard to their basic orientation and potential areas of activity (see Table 7).

Within NATO and Russia assess differently, how various arms control regimes might contribute to improved political relations. Western Europe still regards the INF Treaty and – despite all the difficulties – conventional arms control as important foundations of European security, while Russia is questioning these specific regimes.

Furthermore, some in Washington even doubt the need for continued arms control with Russia. Key figures in the political opposition and in the strategic community argue that continuing formal arms control is no longer necessary given improved relations with Russia. Others regard treaties as an unnecessary restriction on US military superiority. Finally, some point out that since the end of the Soviet Union, Russia no longer is an equal adversary of the USA and that symmetrical arms control is therefore an obsolete concept. These arguments – which were particularly prevalent under the Bush administration – do not yet determine US arms control policies. However, they are gaining ground the more costly arms control becomes and the longer it takes to reach agreements on further disarmament steps.

Since the Bush administration withdrew from the ABM Treaty in 2002, many in Moscow have criticised the old arms control architecture as outdated because it freezes existing military disparities and does not adequately reflect the changed geopolitical situation. In Russia, there is widespread criticism that those arms categories in which the USA has an advantage (missile defence, advanced conventional forces, space weaponry) remained unregulated while existing regulations have worked to Moscow's disadvantage as a result of NATO enlargement. The CFE Treaty is seen as a case in point.

In the long run, Moscow aims to close the military gap vis-à-vis NATO's conventional capabilities by modernizing its own forces, even if this seems unrealistic against the background of US economic and technological superiority. In the short-term, Moscow wants to compensate its conventional weakness through nuclear weapons.

This reaction should be considered as a rhetorical attempt to disguise Russia's military technological inferiority rather than as a realistic policy based on an assessment that Russia at can achieve parity with the USA in the sphere of nuclear weapons.

There are very few overlaps in terms of military capabilities and arms control preferences between NATO and Russia (see Table 7). Military parity exists on strategic nuclear weapons, where an agreement based on concepts of symmetry has recently been reached– the New START

Table 7: NATO and Russia asymmetries with regard to military capabilities and arms control preferences

| Category | Existing arms control instruments | Military advantage | arms control preference |
|---|---|---|---|
| Heavy conventional weapons | (A)CFE Treaty<br>Open Skies | NATO | Western European NATO states |
| Conventional Prompt Global Strike | – | USA | Russia |
| Strategic nuclear weapons | New START | – | Russia/NATO |
| Tactical nuclear weapons | (Presidential Nuclear Initiatives)<br>INF | Russia | USA |
| Missile defence | – | USA | Russia |
| Military research and development | – | USA/NATO | – |

Treaty. Russia particularly wants to catch up with the USA in respect to conventional force capabilities. Moscow is concerned about weapon systems that can destroy Russian nuclear weapons before they are launched (CPGS) or after launch (missile defence). Tactical nuclear weapons have taken on particular importance because they are the only category where Russia has a numerical advantage. Moscow therefore uses them as a bargaining chip to compel the West to enter into talks on other issues.

## 5.3 Different Methods

Given the manifold disparities and the unequal starting position of the European powers, it must again be established why consolidation and adjustment of existing arms control treaties and the conclusion of a new agreement is in the interest of the relevant actors. From a historical standpoint it has generally been easier to pursue arms control between partners that possess roughly equal political and militarily capabilities, however, arms control can also succeed between parties with different interests and capabilities.

Parity-based arms control under asymmetrical conditions is difficult because it requires that the two sides are able to bundle divergent interests on specific issues in a package which achieves more security at lower levels of armaments. Such a quid pro quo, however, requires a situation in which the two sides no longer perceive military imbalances in individual areas as threatening. Both sides must be confident that military means will not be used even if under conditions of a political conflict over fundamental interests. NATO and Russia have not yet developed such trusting relationship. Particularly in Moscow, considerable mistrust of NATO's intentions remains (see Section 4). Within NATO, competing concepts of Alliance relations with Russia co-exist (see Section 3.2). This hinders the development arms control policies that would reduce Russian advantages, as well as the consideration of measures that would require unilateral concessions by NATO in areas in which it is superior – which is most of them – in order to reduce Russian threat perceptions.

Against the background of this stalemate, NATO as the militarily stronger side, should pursue three parallel arms control policy approaches. In the short-term, the goal should be modest but real progress in security policy areas that are relatively uncontroversial. In the medium- to long-term both sides should aim to improve the conditions for a political understanding on force structures that would fit into a common European security architecture. NATO and the USA should:

1. show restraint in those areas in which they possess a military advantage;

2. try to increase mutual trust through measures of reciprocal and unilateral transparency involving weapons systems that have lost their military relevance;

3. drive forward treaty-based arms control by adapting the CFE Treaty and supporting a comprehensive New START follow-on agreement.

An honest partnership also requires both sides to identify issues that for the time being cannot be addressed by arms control. For example, given current positions in the US Congress, it will hardly be possible to limit (P)GS programmes through arms control instruments or to halt US missile defence plans completely.

## 5.4 Self-Limitation of Military Capabilities

First of all, it is essential that the USA and NATO resist the temptation to increase their military dominance. Given Russian weaknesses, a policy of further arms build-up, even if not directed (primarily) against Russia itself, could trigger a new arms race.

The change of direction with regard to missile defence plans in Europe is an indication that the Obama administration is more open to a policy of self-restraint – at least in certain areas – than its predecessor. The ratification debate of the New START Treaty, at the same time, showed the limitations of such a policy. Thus, the US Senate, in return for its giving advice and consent to the Treaty, demanded that US plans to establish a missile defence shield and enhance PGS capabilities must not be constrained. In Congress, but also in the military establishment, many continue to focus on a policy of military dominance, which stifles arms control attempts from the outset.

Within NATO, the conflict between nuclear weapons states and non-nuclear weapons states as well as between arms control advocates and sceptics hinders the

development of a coherent arms control policy. However, NATO could contribute to a policy of engagement with Russia by making unilateral concessions without reducing its own security.

In Moscow, the radical change of direction on arms control since the last US presidential election raises questions about the consistency of future US policies. Furthermore, there are influential voices in Russia who suspect that US support for Global Zero in reality conceals an attempt to secure US conventional superiority. Nevertheless, for its part, Moscow should refrain from complicating the prospects for arms control progress through further nuclear rearmament programmes. Furthermore, a reduction of subregional Russian forces in the military districts adjoining the Baltic region could help to reduce mistrust of Moscow's intentions within NATO and thus facilitate arms control advances.

## 5.5 Reciprocal Unilateral Measures

Both sides could attempt to prevent arms race in those areas in which there is no direct competition by implementing, in a coordinated fashion, reciprocal transparency, trust-building and arms limitation measures. Such steps do not have to be laid down in a formal agreement. The classic example of such reciprocal steps are the presidential initiatives of 1991/92 in which US President George Bush senior and his Russian counterparts Mikhail Gorbachov and Boris Yeltsin took important steps towards limiting tactical nuclear weapons.

Such measures could perform a number of functions. They could:

- promote the trust needed for concluding treaty-based arms control agreements;
- test individual procedures for informally monitoring such agreements; and
- lead to advances in areas – such as nuclear security – which are not regarded as suitable for traditional arms control.

Even today, progress could be made with regard to tactical nuclear weapons in terms of transparency and declaratory policies on the basis of reciprocal unilateral measures.

## 5.6 Adaptation of Existing Treaties and Negotiation of New Treaties

As the weaker party, Russia has an interest in limiting the military superiority of the USA and NATO. However, the NATO states also have an interest in Russia's permanent inclusion in arms control, for example, in order to avoid instability in flank regions or to gain information about Russia's military capabilities through verification. Without treaty-based arms control these goals cannot be sustainably achieved.

Official Russian demands that other nuclear weapons states be included in the next round of arms control are unrealistic. Instead, NATO and Russia should try to involve China in a dialogue on confidence and security building measures at an early date. The five permanent members of the UN Security Council held a first meeting on issues of nuclear verification and transparency in September 2009. This process is to be put on a more permanent footing and enhanced by the establishment of various working groups (see Gottemoeller 2011). Over the long term, such a dialogue could provide a basis for the multilateralisation of nuclear arms control.

In addition, the USA, Russia and China should begin a strategic dialogue on missile defence. The USA has already begun such a process at the operational level, although it remains difficult (see Dunn 2009). Such a dialogue with China should be conducted within a trilateral framework (Beijing, Moscow and Washington) even if NATO in Lisbon has decided to build up a joint missile defence system.

We have developed the following recommendations concerning the key areas of arms control affecting Europe.

## 5.7 Recommendations on Conventional Arms Control

Given the threat that the CFE Treaty will become a total right-off, core elements of the conventional arms control regime in Europe should be safeguarded. This concerns in particular transparency and inspection rules and keeping open the option on limitations.

### 5.7.1 Transparency and inspections

The CFE Treaty states should even after a possible abandonment of consultations in the format of 36 states continue to implement the CFE Treaty in a format involving 29 countries (without Russia). Should it not prove possible to adhere to this over the long term it is worth considering handing over data exchange and inspections

Table 8: Measures to strengthen European arms control

| Category | Confidence and security building measures | Quantitative limitations | Qualitative limitations |
|---|---|---|---|
| Conventional heavy weapons systems | – Modernisation of the Vienna Document independent of CFE progress<br>– Longer term: development of a new comprehensive transparency instrument for all categories of conventional forces | – Suspension (but not termination) of CFE talks<br>– Continued CFE implementation without Russia (29 countries)<br>– If this is not possible, transfer of the transparency and verification regime to the NATO-Russia Council | |
| Conventional Prompt Global Strike | – Strategic dialogue with Russia<br>– Dialogue with China about confidence and security building measures<br>– Exchange of observers for tests and exercises<br>– No deployment of CPGS systems in Europe<br>– Notification of tests | – Start of negotiations on limitations of conventional outer space weapons<br>– No deployment »dual use«- weapon launchers which can also be used to deliver conventional and nuclear weapons<br>– Establishment of early warning system for missile launches | |
| Tactical nuclear weapons | – Exchange of information on number, locations, status and random on-site inspections<br>– Geographical concentration at central storage sites in Russia<br>– *Sole purpose* doctrine: use of nuclear weapons only against other nuclear weapons countries | – Withdrawal of US nuclear weapons deployed in Europe to US territory<br>– Inclusion of tactical nuclear weapons in a New START successor agreement | – Moratorium on the modernisation of weapons and delivery systems |
| Missile defence | – Joint exercises involving tactical missile defence systems<br>– Creation of a centre for data exchange on early warning of missile launches<br>– Creation of a working group for joint missile defence with regular meetings<br>– Regular exchange of data on tests and performance of missile defence systems | – Establishment of a strategic missile defence system in NATO only in cooperation with Russia<br>– Building of an operational centre for joint strategic missile defence<br>– Creation of a treaty banning the destruction of objects in space | |

to the NATO-Russia Council, but only with Russian participation.

Over the longer term, it is worth contemplating the development of a new comprehensive transparency instrument at pan-European level (OSCE) which would take in all categories of conventional forces, including naval forces.

The routine modernisation of the Vienna Document 1999 should be continued with all speed, regardless of the CFE situation. The two sides should resist the temptation to hold the Vienna Document hostage in response to the lack of progress with regard to CFE.

#### 5.7.2 The whole package

Consultations among 36 should not be terminated once and for all, but merely interrupted for a certain period. This period should be used for working out new conceptual approaches.

### 5.8 Recommendations on Prompt Global Strike Systems

US programmes for advanced conventional precision weapons which can destroy targets with high accuracy globally and in a short time (CPGS) are still largely in the development stage. They represent a new challenge for crisis stability and for progress on nuclear disarmament, also with regard to the goal of a nuclear-free world. The USA drives the development of relevant technologies, including weapon technologies that could be used in space. In contrast, conventional precision delivery systems, such as cruise missiles deployed on US bombers and submarines for regional deployment, are already available. The Russian military views these systems as threatening its own strategic weapons as well as its conventional warfighting capabilities (see Section 2.3).

#### 5.8.1 Transparency

The USA should deepen the strategic dialogue with Russia and China and urge the development of confidence and security building measures for strategic weapon systems and arms control in outer space. First of all, notification could be provided to partners for tests of relevant new conventional delivery systems (including launch time, locations of launch and target sites, flight path and payload, as well as the aim of the test), as well as details of development programmes. Observers could also be invited to certain tests. In the longer-term, a trilateral centre for the collation of early warning data on ballistic missile launches, the notification of test launches of strategic delivery systems and discussion of future programmes should be established. The nuclear weapons states France and the UK could also participate in such a centre.

Space is increasingly significant with regard to early warning of missile launches in terms of reconnaissance capabilities. Maintaining sensor technology in space is essential for continuing deterrence under conditions of further reductions in strategic arsenals. Since some states have developed space systems that could also be deployed as space weapons, talks in the Conference on Disarmament should commence on confidence-building in outer space. The first steps would be the notification of relevant programmes and declarations on a ban on attacks of objects in outer space. An Additional Protocol to the outdated Space Treaty of 1967 could also be contemplated.

#### 5.8.2 Limitations

NATO should refrain from stationing CPGS systems on European territory. The establishment of a joint early warning system for missile launches with Russia could cover notification of tests of new conventional precision delivery systems. The USA could limit the number of strategic high accuracy delivery systems and in the course of future talks with Russia on further nuclear disarmament could work out a new strategic balance. The current deterrence scenarios are still based on the first-strike scenarios of the Cold War.

### 5.9 Recommendations on Missile Defence

Considerable efforts in terms of development and testing are still needed for missile defences. To date, NATO has presented no specific plans for its missile defence architecture; nor does it currently possess the relevant hardware such as radar and interceptors. The favoured BMD

systems are US-made. For this reason, and although there is still time for reaching an understanding between NATO and Russia, the foundations for cooperation should be created as soon as possible. Europeans must make it clear what their aims are and how they intend to achieve them, also in relation to Russia. Genuine cooperation with Russia requires a strong commitment on the part of the political leadership of the participating countries and additional financial resources.

#### 5.9.1 Transparency and Future Cooperation

If the main missile threat stems primarily from the Middle East, NATO-Russia cooperation is eminently feasible. A joint concerted threat assessment would be one basis for such cooperation. Cooperation with Russia in relation to the Middle East has considerable advantages. Russia has radar systems on its southern periphery which could also be used for the purpose of effective early warning for NATO and the USA. Regular missile defence exercises involving NATO systems, such as Patriot, or Russian S400/S500 defence systems could form the basis of further cooperation and the establishment of tactical missile defence systems.

European industry could also participate, for example, in the construction of a joint early warning system. In the first phase, NATO and Russia could negotiate and sign a memorandum of agreement which describes in more detail the location, purpose and further plans for an early warning system. Over the long term, NATO could establish a joint centre with Russia for gathering early warning information by means of various earth- and space-based sensor technologies.

A Russian-US-European working group could be established to work on the fundamental defence architecture and operational procedures. The establishment of joint mobile radar could also be pursued, as well as the creation of a US-European early warning satellite which could be delivered into space by Russian launchers. Such a joint project requires the full attention of the political leaderships and additional investment by all sides. On current evidence, it is questionable whether the parties are ready for this.

#### 5.9.2 Limitations

A debate about a successor treaty to the New START treaty should also address the maintenance of strategic stability under conditions of the establishment of missile defences and conventional strategic weapon systems. A treaty banning space weapons, including international verification of compliance of a ban on space weapons is as necessary over the long term as the geographical and numerical limitation of missile defence systems is. The details can be worked out in negotiations between the nuclear powers.

### 5.10 Recommendations on Tactical Nuclear Weapons

Tactical nuclear weapons are relics of the Cold War and their elimination is overdue. There are two reasons why these weapons have not yet been dismantled, despite the risks of their accidental or inadvertent use. On the one hand, TNW are still perceived as significance symbols of burden-sharing within NATO and on the other hand Russia views them as bargaining chips to obtain arms control concessions from the USA and NATO in other areas (see Sections 3 and 4.2).

In the context of talks about a New START follow-on agreement, the USA pursues the goal of equal limits on all nuclear weapons, regardless whether they are strategic or tactical nuclear weapons. This approach needs to be supported because it correctly recognises that there are no longer any clear dividing lines, either militarily or strategically, between tactical and strategic nuclear weapons. The road to such a comprehensive agreement which includes all nuclear weapons will probably be a long one, not least because there exists little experience on the verification of nuclear warheads or of delivery systems for tactical nuclear weapons.

Within the framework of its Deterrence and Defense Posture Review NATO should make it clear that it unconditionally supports the inclusion of tactical nuclear weapons under a New START follow-on agreement. In order to prepare the ground for such an agreement, NATO could signal its readiness to withdraw tactical nuclear weapons deployed in Europe to US territory. Such a decision would not have to be the end of European involvement in NATO nuclear policy formulation (see Kamp 2011). But it would

probably be necessary to find other, non-nuclear means of reassurance.

In order to facilitate the inclusion of tactical nuclear weapons in arms control and to reduce threat perceptions, NATO and Russia should also provide for more transparency by disclosing the number, locations and status of their tactical nuclear weapons. This could be verified by means of random inspections involving reciprocal visits to selected storage facilities. Russia could promote such an approach by concentrating all tactical nuclear weapons in a few central storage facilities and also by storing warheads for tactical nuclear weapons separately from the carrier systems.

A moratorium on the modernisation of the tactical nuclear weapons deployed in Europe, their delivery systems and the infrastructure needed for the deployment of these weapons would demonstrate that NATO and Russia view these weapons as remnants of the Cold War that will be dismantled in the medium term.[8]

Finally, NATO and Russia should limit the role of nuclear weapons to the deterrence of nuclear attacks by other nuclear weapons states. The USA has already indicated the desirability of such a »sole purpose posture« and has the support of many European allies, including Germany, for adopting such a posture.

Genuine, substantial and sustainable progress on arms control will be achievable only when political relations between Russia and NATO have improved fundamentally. Arms control and confidence building can help move this process along. But they are not a substitute for it.

8. Except for measures whose sole purpose is securing these weapons.

# Appendix

## Overview: The most important conventional and nuclear arms control agreements and initiatives in and for Europe

| Agreement | Date (came into force) | Contents/members |
|---|---|---|
| Anti-Ballistic-Missile Treaty (ABM Treaty) | 26.5.1972 (03.10.1972) 13.06.2001 Withdrawal of the USA | Limitation of anti-ballistic missile systems<br>*States Parties: USA/USSR (Russia)* |
| Intermediate-Range Nuclear-Forces Treaty (INF Treaty) | 8.12.1987 (1.6.1988) | Ban on the possession. production and storage of intermediate-range nuclear systems (fully implemented, joint verification has ended)<br>*States Parties: USA*/USSR (as of 1991 the Soviet Union's nuclear successor states Belarus, Kazakhstan, Russia and Ukraine) |
| Treaty on Conventional Armed Forces in Europe (CFE Treaty) | 19.11.1990 (9.11.1992) | Elimination of quantitative asymmetries in respect of five major weapons systems in four zones from the Atlantic to the Urals<br>*States Parties: initially 22 states (NATO/former Warsaw Pact states), later grew to 30 states* |
| Strategic Arms Reduction Treaty (START-I) | 31.7.1991 (5.12.1994) (superseded by New START) | Reduction of strategic nuclear weapons within seven years by around one-third in comparison to 1991 to joint ceilings of 1,600 launchers and 6,000 warheads (fully implemented)<br>*States Parties: USA/USSR (*(as of 1992 the Soviet Union's nuclear successor states Belarus, Kazakhstan, Russia and Ukraine)*)* |
| Presidential Nuclear Initiatives | US declaration, 27.9.1991 Russian declarations, 5.10.1991, 29.1.1992 | Limitation and reduction of tactical nuclear weapons<br>*States: USA/USSR (Russia)* |
| Treaty on Open Skies | 24.3.1992 (1.1.2002) | Opening up territory of States Parties to unarmed aerial surveillance flights<br>*States Parties: 26 states (NATO/former Warsaw Pact states)* |
| START II | 3.1.1993 (never entered into force, superseded by SORT Treaty) | Further reductions in strategic nuclear weapons to 3,000–3,500 warheads for each side and a ban on multiple warheads (superseded by the coming force of the SORT Treaty of 2002)<br>*States Parties: USA/Russia* |
| The Florence Agreement within the framework of the Dayton Agreement | 14.6.1996 | Ceilings for five major weapons systems and verifiable reduction of stockpiles<br>*States Parties: Serbia/Montenegro, Bosnia-Herzegovina, Croatia* |
| Comprehensive Nuclear Test Ban Treaty (CTBT) | 10.09.1996 (not yet in force) | Ban on any kind of nuclear weapons test explosion and other forms of nuclear explosion. The Treaty is intended to put an end to the development of new kinds of nuclear weapons and to limit the vertical proliferation of nuclear weapons.<br>*States Parties: 182 signatories and 155 ratifying countries: some important nuclear weapons states have still not ratified or signed CTBT* |
| Vienna Document 1999 | 16.11.1999 (1.1.2000) | Regional measures on transparency and trust building in the OSCE context, building on the Vienna Documents of 1990, 1992 and 1994<br>*Participants: OSCE participating States* |
| Adapted CFE Treaty (ACFE) | 19.11.1999 (not yet come into force) | Adaptation of the CFE Treaty: replacement of bloc-to-bloc principle by system of national and territorial ceilings on major weapons systems<br>*States Parties: 30 states (NATO/former Warsaw Pact states, ratified only by Belarus, Kazakhstan and Russia)* |
| Strategic Offensive Reduction Treaty (SORT) | 24.5. 2002 (superseded by New START) | Reduction of strategic nuclear weapons to around 1,700–2,200 warheads by 2012<br>*States Parties: USA/Russia* |
| New START | 8.4.2010 (5.2.2011) | Further reductions in strategic nuclear weapons within seven years to common ceilings of 700 deployed launchers and 800 deployed and non-deployed launchers and 1,550 warheads each<br>*States Parties: USA/Russia* |

# Appendix

## Abbreviations

| | |
|---|---|
| **ABM** | Anti-Ballistic Missile |
| **ACFE Treaty** | Adapted CFE Treaty |
| **ALTBMD** | Active-Layered-Theatre-Ballistic-Missile-Defence |
| **BMD** | Ballistic Missile Defence |
| **CFE** | Conventional Armed Forces in Europe |
| **CPGS** | Conventional Prompt Global Strike |
| **DCA** | Dual Capable Aircraft |
| **EPAA** | European Phased Adaptive Approach |
| **GBI** | Ground-based Interceptor |
| **GMD** | Global Midcourse Defense |
| **ICBM** | Intercontinental Ballistic Missiles |
| **INF Treaty** | Intermediate-Range-Nuclear-Forces Treaty |
| **IRBM** | Intermediate-Range Ballistic Missiles |
| **MDA** | Missile Defense Agency |
| **MRBM** | Medium-Range Ballistic Missiles |
| **NRC** | NATO-Russia Council |
| **NPT** | Non-Proliferation of Nuclear Weapons |
| **PGS systems** | Prompt Global Strike systems |
| **SRMB** | Short-Range Ballistic Missiles |
| **START** | New Strategic Arms Reduction Treaty |
| **THAAD** | Terminal High Altitude Area Defense |
| **TNW** | Tactical Nuclear Weapons |
| **US STRACOM** | US Strategic Command |
| **Warsaw Pact** | Warsaw Treaty Organization of Friendship, Cooperation, and Mutual Assistance |

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