The Specific Verification Requirements of a WMD/DVs Free Zone in the Middle East: Lessons Learned from Existing Arms Control and Disarmament Treaties

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The Middle East is an area which has long been subject to conflict and in which the risk of war is always present. A conference which led to greater understanding and the elimination of the threat of weapons of mass destruction (WMD) and their delivery vehicles (DV)s would be an enormous achievement not only for the nations of the region but also for the entire world. This process could be seen as consisting of three principal elements: confidence- and security-building measures (CSBMs), reductions in existing systems, and, presumably in a final stage, the complete elimination of relevant systems and capabilities.

The Role of Verification on the Way towards a WMD/DVs Free Zone in the Middle East

Successful implementation of each element would be essential to build the trust necessary to move to a more ambitious stage. Verification would be increasingly important, although, since CSBMs would generally not be legally binding, it would play less of a role in those measures. However, the Middle East may not follow this exact model. At least in principle, the regional states already agreed to the common goal to eliminate all WMD/DVs from their zone at the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) – not including Israel. Such a consensus has generally not been the norm to disarmament and arms control activities. Moreover, WMD are not believed to be widespread in the region. This means that procedures to carry out reductions – once they are politically agreed – may not be the same problem that accompanied major agreements on nuclear, chemical, and even conventional weapons.

This Policy Brief assumes that, at entry into force of the treaty, all the states parties will have signed and ratified the NPT, Comprehensive Test Ban Treaty (CTBT), Chemical Weapons Convention (CWC), and Biological Weapons Convention (BWC) and will have accepted International Atomic Energy Agency (IAEA) Comprehensive Safeguards and the Additional Protocol (AP). Thus, they will have accepted and be participating in the various verification regimes mandated by these agreements – as is already today the case for most of the countries in the prospective zone.

If this proves not to be the case, the situation would not be hopeless, but it would greatly complicate creating an effective verification regime. Once countries have agreed to prohibit WMD, it is difficult to see why they would not join the existing treaties that the world has designed to implement this goal.1 Any holdouts would certainly be subject to intense pressure to join, both from within the zone and outside it. The task then becomes to identify what additions or modifications to existing verification regimes are needed to meet the special requirements of the Middle East. Of course, verification would not be the only consideration in a state’s decisions, political and other factors are also playing a key role.

Outline of this Policy Brief

While Policy Brief No. 16 discussed general verification principles and insights gained from existing arms control and disarmament

Abstract

This Policy Brief addresses specific verification issues likely to arise in negotiating and implementing a WMD/DVs Free Zone in the Middle East. The analysis proceeds from the premise that, at entry into force of the treaty, all parties will have become members of the principal treaties in the WMD area and will have accepted IAEA safeguards and the Additional Protocol. The international experience with verification will form the basis in the zone. Its members can derive considerable benefit from the fact that all forms of WMD/DVs have successfully been eliminated from other parts of the world.

It is widely believed that WMD already exist in the Middle East and have actually been used. Delivery systems also exist in abundance. Furthermore, the regional history of conflict and suspicion poses an essential demand for effective means of resolving compliance issues. More effective mechanisms need to be developed, including confidence- and security-building measures, reductions in existing WMD, and the total elimination of relevant systems and capabilities. This Policy Brief puts forward ideas for creating an effective verification regime satisfactory to all parties in the zone.

This Policy Brief builds on the contributions of the participants of an Academic Peace Orchestra Middle East Workshop held in Vienna, Austria, from September 8-10, 2012, generously founded by the Foreign Ministry of Norway. The views represented in this Policy Brief are solely those of the authors in their private capacity and do not necessarily represent the views of entities the authors are associated with.
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How to Verify the Middle East WMD/DVs Free Zone

The overall question of how much verification is sufficient or necessary is not one that can be answered definitively in advance, as it will depend on the judgment of the respective members to the zone. Clearly, in the Middle East trust is frequently lacking and stronger verification measures than currently provided for in existing agreements may be needed. Past experiences can help spot strong and weak features of the verification frameworks and guide this process. Certainly not all provisions are equally important, nor are all potential violations qualitatively equal. In this regard, the ‘material breach’ provision in the Vienna Convention on the Law of Treaties is relevant. This is the most serious form of a violation and thus defined as “[a] violation of a provision essential to the accomplishment of the object and purpose of the treaty.”

A useful guiding principle should be that the national security of the states parties need not be absolute, but it should at least not be less under the new treaty than it would be without the one. When judging whether verification is effective or ‘good enough’, it is important to avoid the trap of being required to prove the negative: no verification regime can be expected to prove that something does not exist. Therefore, concerns about undeclared weapons or major prohibited components or activities will need to be addressed and may, in fact, be the most difficult verification problem. How high a standard of confidence states parties will require remains to be seen, and may change over time. CSBMs, transparency, sharing of intelligence, and the acceptance of challenge inspections would all contribute to solving this problem.

On-site inspection will certainly be an important part of the verification regime. Where this measure is applied, it will be important to protect the rights of both the inspecting and the inspected party. This means that the inspecting side must be given sufficient access to make compliance judgments, while the inspected party should be protected from unwarranted intelligence-gathering or unnecessary interference with its normal activities.

Great care must be given to drafting the provisions of the treaty including clear definitions. For example, the Strategic Arms Reductions Treaty (START) contained 124 definitions, while the New START Treaty contains 90. Ambiguities should only be tolerated when they are purposeful and clearly understood. There needs to be a clear common notion of terms such as ‘weapon’, ‘weapon component’, ‘weapon program’, and ‘weapons capability’. This has frequently not been the case in international discourse. The Reagan administration unilaterally reinterpreted key provisions of the Anti-Ballistic Missile Treaty. Although this was later reversed by the Clinton administration, significant harm was done to U.S.-USSR relations. Under the Partial/Limited Test Ban Treaty differing understandings of the term ‘debris’ led to damaging compliance concerns.

Another useful lesson from the Cold War experience is that the use of mock or trial inspections can be very fruitful. For example, even while the START Treaty was being negotiated, the U.S. and USSR demonstrated in realistic conditions how their proposed inspection proposals would work. This allowed both sides to make realistic assessments of these proposals to converge on specific procedures and it led to important improvements in the treaty drafts.

Three Major Questions Regarding Verification

The adequacy of specific verification regimes can only be judged on a case-by-case basis. Nevertheless, in general, three major questions regarding verification can be posed:

1. Can violations be detected and identified?
2. Who decides whether a violation has occurred?
3. What response should be made to violations?

There has not been a large number of violations of existing arms control and disarmament treaties. However, some of those that did occur have been serious and highly publicized and have highlighted the difficult
issues associated with the third question. Nonetheless, these regimes are generally operating effectively. Experience has shown that one should anticipate that implementation issues will emerge, sometimes due to differing interpretations of treaty language. One should also be aware that issues related to dual-use will arise and mechanisms need to be in place to deal effectively with them. In addition, states parties should expect that changes in technology and equipment will occur, along with unforeseen circumstances. Therefore, it is important to have efficient procedures in place in order to make minor technical modifications improving the viability and effectiveness of the treaty, without having to resort to cumbersome formal amendment procedures. Such modifications could efficiently be made by an implementing commission. For example, the Joint Compliance and Inspection Commission under the START I Treaty made over 100 such technical modifications and interpretations of language.

Nuclear Weapons and a WMD/DVs Free Zone in the Middle East

The nuclear component of WMD is the most important and the one likely to receive the most attention. The nuclear programs of Iraq, Israel, and Iran as well as to a lesser extent Syria and Libya, have been subject to a lot of speculation and will certainly become an issue in the negotiations of the Middle East Conference. In this regard, the most relevant experience is to be found in the U.S.-Former Soviet Union (FSU) treaties and in South Africa.5

Israel is the only country in the zone which is not a party to the NPT. However, it does have facilities subject to IAEA safeguards. Iran has been the subject of international sanctions and UN Security Council (SC) Resolutions related to its nuclear programs. Saudi Arabia and Syria have yet to sign the CTBT, while Israel, Iran, and Egypt are signatories, but have not yet ratified the treaty.

The Zone and Nuclear Weapons: Four Possible Scenarios

A key assumption is that all states would make (and keep up to date) declarations regarding their nuclear materials and activities. One can envision four possible scenarios regarding nuclear weapons (also including relevant facilities and activities):

1. All states declare that they do not have, and never did in the past have, nuclear weapons.
2. One or more states declare that they have nuclear weapons.
3. One or more states declare that they previously had nuclear weapons, but do not have any such weapons now.
4. One or more states declare that they do not now have nuclear weapons and decline to discuss whether they had them in the past.

Scenario 1: This scenario, if true, would be the easiest to deal with. However, doubts would arise as to the truth of such declarations. As is the case with all four scenarios, much would depend upon the definition of what constitutes a ‘nuclear weapon’. For example, if there were no clear agreed definition, a state might claim it had no such weapons if a small component were missing, but could be easily added. In the START Treaties, a similar problem was encountered (and solved) regarding when an object should be counted as a missile. Various definitions could be successful – the most important consideration is that all states have the same understanding.

Scenario 2: This scenario – the only one in which existing nuclear weapons are declared – would be the most complicated from a verification viewpoint. Procedures would need to be devised to eliminate existing nuclear weapons. No such internationally agreed procedures exist and nuclear weapons have never been disassembled/eliminated under international supervision. The challenge would be to carry out these activities in such a way as to provide assurance that agreed procedures were followed, but without revealing sensitive design information and not risking proliferation. Failure to protect such critical information would likely be unacceptable to the host state and could violate the NPT if inspectors from Non-Nuclear Weapon States were involved. Useful work towards this end has been carried out jointly by the UK and Norway. Substantial relevant research was also conducted under the Trilateral Initiative involving the U.S., Russia, and the IAEA. Countries should certainly draw upon all this work.6

Scenario 3: This may be the most interesting option – and possibly most likely. Under this scenario, which basically follows the South Africa precedent, a state with nuclear weapons would disassemble/eliminate all nuclear weapons unilaterally before entry into force of the treaty. Eventually avoiding the difficult multilateral process, as described in the second scenario, the task would then be to verify that all nuclear weapons had been eliminated and all major components are accounted for. Of course, the key relevant records regarding the nuclear weapon program would need to be made available completely. South Africa succeeded in this endeavor to the satisfaction of both the IAEA and the international community.

Scenario 4: This is a variation of the third scenario under which a state would neither confirm nor deny past possession of nuclear weapons, but would declare that it presently had none. The assumption is that, if it had once had such weapons, they had been eliminated. The state might insist that only the present situation at entry into force was relevant, not past actions. However, it might reveal that it had carried out certain activities related to nuclear weapons and some components might be presented to inspectors. A more cooperative approach by Iraq prior to the Second Gulf War might bear some resemblance to this scenario. Depending upon how open the state was to revealing past activities, a refusal to give a convincing explanation would probably give rise to serious doubts.

In all four possible scenarios, a contentious issue is likely to be past activities. The South Africa precedent would represent the ideal situation. This would mean that even if the dismantling does not take place under an international control, it should afterwards be verified that the dismantling has been complete, and all single-use infrastructure has been eliminated. In this case, inspectors would have full access to records, locations, and persons involved with past activities relevant to WMD. However, this may not be realistic. The UN Security Council demand for a ‘full, final and complete’ accounting by Iraq of all its WMD activities proved to be a huge stumbling block with disastrous results, certainly partly resulting from a lack of cooperation by Iraq. Yet, with the gift of hindsight, it may be that no such accounting that was possible could have satisfied suspicious observers. As this could prove to be a crucial verification issue, states will need to think carefully about the extent of knowledge of the past that will be necessary to have effective verification. It could be a mistake to allow disputes concerning former activities to stand in the way of an agreement that could satisfactorily govern behavior in the future.

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CD.9 Although the NPT allows enrichment to a worldwide agreement coming from the Middle East will probably have to solve this problem on its own, rather than looking for years. The deadlock there indicates that the Conference on Disarmament (CD) for weapons (FMCT) has been on the agenda for nuclear programs of concern and took part in verification processes around the world.

The Control of Fissile Material

One complicating feature related to the elimination of nuclear weapons that does not apply to chemical or biological weapons, is that even after an effective and verified disassembly of a nuclear weapon, dangerous material remains. Thus, the disposition of the fissile material at the heart of such weapons – weapon-grade plutonium or highly-enriched uranium (HEU) – poses another largely unsolved problem. Such material could be stored indefinitely in secure facilities under international supervision. Experience with perimeter and portal continuous monitoring (PPCM) gained in implementing the Intermediate Range Nuclear Forces (INF) and START Treaties could be relevant here. HEU could be blended down to low-enriched uranium (LEU), as is being successfully done with 500 metric tons of HEU formerly in Russian nuclear weapons, which then becomes fuel for U.S. nuclear reactors. The U.S.-Russia Plutonium Disposition Agreement provides one possible way to deal with plutonium. This is for the countries in the zone to decide, but international advice and assistance will probably be needed.

All fissile material in the zone should be declared and controlled, but the question of new fissile material will also arise. A treaty banning production of new fissile material for weapons (FMCT) has been on the agenda of the Conference on Disarmament (CD) for years. The deadlock there indicates that the Middle East will probably have to solve this problem on its own, rather than looking to a worldwide agreement coming from the CD. Although the NPT allows enrichment of uranium, it would be preferable if such activities were not conducted on a national basis. Thus, regional centers or fuel banks assistance will probably be needed.
inside or outside the zone would be much easier to manage from a verification standpoint. A number of possibilities exist, and various relevant proposals have been made. It would certainly facilitate effective verification if uranium enrichment and plutonium reprocessing and separation were simply prohibited in the zone. This could be done without impacting the full range of permitted peaceful nuclear activities. One can assume that help from outside the zone would be forthcoming, if requested.

The problem of fissile material becomes simplified if one assumes that all states parties will be Non-Nuclear Weapon States under the NPT. This means that all such material would automatically be subject to the rigorous controls of IAEA safeguards and the Additional Protocol. Thus, it appears that a WMD/DVs Free Zone need not await a solution to the FMCT problem, which, as noted above, really only impacts states not under the NPT. While new production would be prohibited, dealing with any existing material would require special arrangements, perhaps along the lines of the South African precedent. If additional constraints are found to be necessary, it will be important that these not undermine the primary responsibility of the IAEA for NPT safeguards.

Regional Models of Nuclear Verification

Although the IAEA would be expected to play a major role in nuclear verification, other regional models exist. The European Atomic Energy Community (EURATOM) has a long history of carrying out inspections of nuclear facilities in Europe. The Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) plays a similar role for Brazil and Argentina. Five nuclear weapon free zones are operating successfully in various parts of the world (plus Mongolia, which has declared itself a ‘nuclear weapon free state’). These rely primarily upon the IAEA for verification under the NPT, but do show how regional cooperation can allow peaceful nuclear activities, while keeping nuclear weapons out of their zone. It is almost certainly true that the Middle East faces greater difficulties in the nuclear area than any of these regions, but several countries in these NWFZ did overcome nuclear-weapon aspirations in the past.

Chemical Weapons and a WMD/DVs Free Zone in the Middle East

Unlike nuclear arms, chemical weapons have actually been used in the Middle East by Iraq both internally and against Iran in the 1980s. This horrible experience should make the countries in the zone determined to eliminate them. Recent allegations of the use of chemical weapons in Syria should reinforce this. In addition, the substantial indifference of outside powers to the use of chemical weapons by Iraq should make this sensitive for the Middle East. Also unlike in the case of nuclear weapons, there exists a comprehensive prohibition on the development, production, stockpiling, and use of chemical weapons. The CWC, which entered into force in 1997, currently has 189 members. All states in the prospective zone are parties, except Israel, Egypt, and Syria (Israel has signed, but not yet ratified the treaty). All three have ratified the 1925 Geneva Protocol, which bans the use in war of asphyxiating, poisonous, or other gases as well as the use of bacteriological methods of warfare, but not the production or storage of such weapons.

Under the CWC, seven states declared that they had chemical weapons. About 71,000 metric tons were declared, the great majority of it in the U.S. and Russia. About 78 percent of this material has been eliminated. In addition, about 8,600,000 related items (shells, etc.) were declared and are being destroyed. Furthermore, large numbers of chemical weapon production and storage facilities were declared and are being eliminated or converted.

The Verification Regime of the Chemical Weapons Convention

To implement and verify the CWC, the member states created the OPCW with about 500 employees and headquarters in The Hague, Netherlands. Assuring the confidentiality of inspection results is aided by the fact that all inspectors are OPCW employees – basically international civil servants – not on loan or secondment from states parties. One unique feature not present in most other arms control and disarmament treaties is the extensive involvement with the private sector – that is, the chemical industry. The expertise and experience of the OPCW should be directly relevant to the Middle East, and inspectors are already active there – for example, in the oil and chemical industries. The on-site inspection activities are extensive: almost 5,000 industrial facilities worldwide are subject to inspection. This creates the requirement to be able to protect proprietary information and the record of the OPCW is quite good on this. It is vital to have the full cooperation of the chemical industry which has generally been the case and should be continued in the Middle East.
There are five principal types of inspections – initial ones to check the correctness of the first declarations, CW destruction inspections, routine as well as challenge inspections, and investigations of alleged use. All measures to date have been of the routine type and typically check the accuracy of declarations. A major verification task in this category is monitoring the destruction of chemical weapons. Two principal methods are used: incineration at very high temperatures to break the chemical bonds, which results in harmless components; and a neutralization process, which leads to a harmless reaction mass after hydrolysis.

Inspectors are assigned 24/7 to the sites where these destruction processes take place and also install closed-circuit television to monitor activities. In the U.S., nine disposal facilities were constructed where CW were stored, in order to avoid the transport of dangerous cargoes to other locations. Due to technical, economic, and legal issues, both the U.S. and Russia have been unable to meet the specified deadlines for destruction of their stockpiles. However, since good-faith efforts from both states are continuing, the delay does not cause problems amongst the CWC members. In the Middle East, similar disposal facilities could be constructed at the relevant sites. For small quantities, mobile disposal units might be used.

Two of the states which declared chemical weapons – Iraq and Libya – are part of the envisaged zone. Iraq has an unknown quantity of chemical agents in bunkers too dangerous to be entered by inspectors. Consultations are being held with the OPCW and the U.S. government regarding disposal arrangements. Libya declared about 26 metric tons of Schedule 1 chemical weapons, of which about half have been destroyed. The remaining weapons are planned to be destroyed by December 2013. It also declared large quantities of unfilled munitions, devices, equipment, and precursor chemicals, all of which are scheduled to be destroyed by December 2016. It is widely accepted that chemical weapons currently exist in Syria, which is not yet party to the CWC – whether they have been used or not remains questioned by many experts.

Another interesting feature of the CWC is that there are provisions for dealing with chemical weapons abandoned by one state on the territory of another. This has happened at the conclusion of a war – for example weapons abandoned by Japan in China at the end of World War II. In such cases, the side which abandoned the material is obliged to pay for its safe disposition. This could be quite difficult, given that there may be no reliable records, the weapons may be buried and leaking, and their exact composition remains unknown. Whether this situation has occurred in the Middle East is uncertain: in Iraq, chemical weapons were apparently rather haphazardly disposed in the desert, which was not only environmentally unsound but also made precise accounting later virtually impossible.

The equipment used by inspectors is carefully specified so as to assure that it is what has been agreed and can detect only chemicals of interest. In some cases, this requires ‘gating’ of instruments so they will not detect substances which are not relevant to the treaty, but could reveal proprietary information. It is also important that equipment be thoroughly cleaned after each inspection, both for safety reasons and so that contamination will not affect the results of future inspections.

In general, the disposal and monitoring methods as well as inspection equipment already proven should be effective for the Middle East. However, special attention might be given to certain issues. The CWC contains extensive lists of possible chemical weapons and precursors to chemical weapons in three ‘schedules’. The creation of new chemicals, including ‘designer chemicals’, proceeding faster than agreement can be reached to add them to the lists poses a potential problem. Also the CWC bans the use of riot control agents in war with the exemption of law enforcement and domestic riot control purposes. The boundary between such agents and chemical weapons can be fuzzy, especially as new agents are created. The use of a powerful anesthetic gas (fentanyl) in the Moscow theatre hostage crisis in 2002 illustrated the problem, since even so-called non-lethal agents can be fatal depending on the circumstances of their application. Use of this gas incapacitated the terrorists and resulted in the rescue of many hostages, but also in a substantial number of deaths.

Finally, although much effort was devoted to carefully crafting the procedures for challenge inspections under the CWC, and it was widely assumed these would be used, this has never happened, in spite of some states having serious compliance concerns. The longer this powerful verification tool remains unused, the greater the political implications and stigma of requesting it become. When significant suspicions or ambiguities arise, states should not hesitate to use the full range of verification techniques provided for in the treaty. Ideally, a country should welcome such inspections on its territory to resolve problems. With a fresh start, Middle

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Although biological weapons verification poses many unique challenges, one aspect to this area is an advantage: Unlike for nuclear and chemical weapons, where elimination is difficult and expensive, elimination of biological agents is comparatively quick and simple.

### Biological Weapons in a WMD/DVs Free Zone in the Middle East

The Biological Weapons Convention entered into force in 1975; it currently has 170 states parties and 12 signatories. Most Middle East countries are members, but, as is the case for the CWC, Egypt, Israel, and Syria are the exceptions (Egypt and Syria have signed, however). There have been high-profile instances of illegal activities related to the BWC. Among these are: the discovery of clandestine anthrax production at Sverdlovsk, Russia, and the anthrax attacks in the U.S. in 2001.

Biological weapons have unique features. Unlike the NPT and CWC, which have elaborate verification regimes, the BWC has none. Efforts to devise a comprehensive verification protocol were halted in 2001 when the U.S. withdrew its support. The basic problem remains that any useful inspections would have to be very intrusive in the pharmaceutical and biotechnological industry and still might not be effective, given the dual-use nature of many biological substances and technologies. Dual-use activities are problematic regarding legitimate research into diseases and vaccines and counter-terrorism. The recent controversy over research into bird flu illustrates this problem. Periodic Review Conferences and meetings of experts in Geneva have attempted to devise confidence-building and other measures to deal with the problem. Among the ideas which have arisen are greater transparency in activities possibly related to BW, such as: development and production of vaccines, bio-defense work, high-containment facilities, and unusual outbreaks of disease. All of these would be useful in supporting the Middle East treaty.

The importance of national implementation legislation to support the BWC is also clear. A related idea is the formulation of a Code of Conduct for workers in relevant industries and academic institutions. For many years, the lack of an implementation organization was viewed as a clear institutional deficit for the BWC. This problem has been addressed by the creation of a three-person Implementation Support Unit in Geneva staffed by permanent UN employees.

Although BW verification poses many unique challenges, one aspect to this area is an advantage: unlike for nuclear and chemical weapons, where elimination is difficult and expensive, elimination of biological agents is comparatively quick and simple. This does have a negative side also, in that this case of disposal makes finding illegal biological substances more difficult. For this reason, declaration of any existing BW, rather than quiet unilateral disposal, seems unlikely (a regime change could prove to be a counter example).

Although attention has properly been focused on the use of biological weapons against humans, it is important not to neglect possible biological attacks against livestock or crops as well. In this regard, one further advantage in dealing with the threat of biological weapons is that much of the defensive work has benefits in coping with naturally-occurring diseases and should be pursued in any case. Therefore, countries should be prepared to deal with anthrax or bird flu, whether caused by nature or deliberate human acts. Moreover, states should cooperate with international institutions like the World Health Organization and the Food and Agricultural Organization as well as the International Organization for Animal Diseases (OIE) in detecting and defending against such events. The proposed Amman Health Centre could form the basis for such useful cooperation.

### Delivery Vehicles in a WMD/DVs Free Zone in the Middle East

The goal of the WMD Free Zone generally includes, in addition to nuclear, chemical, and biological weapons themselves, ‘their means of delivery’. This term is usually not defined. While ‘delivery vehicles’ was originally used in the SALT negotiations to mean ballistic missile launchers, it is now widely applied to missiles. The best interpretation in the present context would be to use it to refer to missiles, missile launchers, and bomber airframes. Due to the dual-use nature of aircraft, the most likely focus for the Middle East would be on missiles and their launchers. Of course, WMD could be delivered in the Middle East by trucks, shipping containers, short-range aircraft, and other systems, but ballistic missiles seem the most threatening weapons to most observers. This is logical because of their short flight times and the fact that the numbers and ranges of missiles are growing in the area. Furthermore, they were widely used during the Iran-Iraq War and are being employed in large numbers against Israel. The situation in the area is greatly complicated by geography, meaning that even rather short-range missiles can attack important targets in multiple countries. In contrast, in the U.S.-USSR negotiations, the opponents were able to define 5,500 km as the distance...
Analysis has indicated that a useful first step would be to prohibit ballistic missiles above a relatively short range: 70 km has been suggested for such a limit. In comparison, 150 km was the limit imposed on Iraq by the UN after the first Gulf War. Ranges this low would require the elimination of a number of existing systems with substantially greater ranges. Specific range limits will obviously be determined by the states themselves, based upon their own security requirements.

International experience with constraining the ranges of missiles, and eliminating those above the limit, is good. Missiles are comparatively large and require flight testing, which can be observed. Elimination methods successfully employed in the INF and START Treaties included destroying them with explosives, static burn, or washing out to eliminate the propellant, followed by crushing the cases, and launching to destruction. All of these methods were subject to observation by inspectors and easily verified with high confidence. However, some of these methods are not compatible with good environmental practices and would not be recommended today.

The elimination of missile launchers and bomber airframes is likewise well-understood and easy to verify. In the INF and START Treaties, entire Conversion or Elimination Protocols spelled out the precise procedures to be followed. Missile silos were blown up and left open for observation by satellites or inspectors. Bomber airframes were dismembered and subject to observation by satellites. Under the INF Treaty, some mobile missile launchers were allowed to be converted to other uses – e.g., fire trucks.

In theory, missiles could be allowed to carry conventional warheads, but not nuclear warheads. However, this would pose extremely difficult verification problems. In the START Treaties, this was avoided by counting all warheads on strategic missiles as nuclear. As noted above, aircraft pose unique challenges because of their dual-use capabilities. The START Treaties do make this difficult distinction in certain cases, if appropriate modifications can be made. Thus, the

### International Implementation, Verification, and Compliance Bodies

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entire B-1 heavy bomber force, which was originally designed to carry nuclear weapons, was converted to load only conventional armaments and is not counted at all. Likewise, four U.S. submarines, formerly carriers of nuclear-armed ballistic missiles, had their launch tubes modified so they now can carry only conventionally-armed cruise missiles. In a zone free of nuclear weapons, this distinction should be substantially easier to verify than it is in the U.S. or Russia, where there are both nuclear and conventional weapons which could potentially be loaded on the same platforms.

**Conclusions and Recommendations**

While the Middle East has a long and confrontational history related to armaments, most of the verification issues which must be considered there have previously been dealt with successfully elsewhere, though never all together in a single comprehensive agreement. In fact, several international verification regimes already operate successfully in the region. Nevertheless, verification experience and expertise in many countries is not extensive and should be built up. The major aspects of existing agreements which will need to be improved for a successful WMD Free Zone primarily involve more intrusive inspection techniques and more effective procedures for dealing with compliance issues – an area in which existing regimes have sometimes appeared to be deficient.

**Verification and Implementation Bodies**

Clearly, the states in a WMD/DVs Free Zone in the Middle East will want to have an implementing body which might also have responsibility for any inspections and other arrangements beyond what would be carried out by existing international institutions, such as the IAEA and OPCW. Almost certainly, such an institution should have greater authority and be more active than the implementing bodies in existing Nuclear Weapon Free Zones. All states parties should be members. There could be an Executive Council and also technical working groups. About ten international verification and compliance bodies are operating successfully today. Additionally, such entities functioned well in the past until their treaties expired. States should study the experience of similar bodies that supervise regional groups like EURATOM and ABACC, though this new institution would almost certainly have broader responsibilities. It is likely that significant technical and scientific expertise would be needed in successfully guiding the implementation process and dealing with compliance issues.

This implementing body should welcome information related to compliance from all sources, including national technical means, whether it comes from states parties or from outside the zone. Of course, whether such information is credible or should lead to action would be a decision for the responsible institution.

A major question will be voting arrangements and how to handle compliance disputes. As noted above, the latter has not been entirely satisfactory in existing implementation bodies, though this has not prevented them from operating successfully. Whether decisions should be unanimous, by majority vote or by a super-majority is something the states will have to resolve for themselves. There are precedents for all three options and the solutions could depend on the gravity of the matter at hand. Requiring unanimity has obvious problems. On the contrary, states outside the Arab League may have concerns that they will be overwhelmed if those states vote as a bloc.

The resolution of disputes related to compliance is an important and difficult question. In the case of bilateral agreements, such disputes can be handled privately by the two parties themselves. Multilateral agreements raise further issues. Compliance judgments are generally considered to be reserved to individual states parties. However, smaller states, or those without access to sophisticated verification means, may wish to have judgments made for them by a special technical body. Even if technical bodies are not permitted to make compliance judgments, some mechanism must be provided for turning judgments by individual states parties into some sort of final decision with legal weight. It will be important to assure that such decisions are balanced and objective. Thus, it will be essential to avoid the extremes of overzealous enforcers who see violations where there are none on the one hand, and a reluctance to face unpleasant or inconvenient compliance issues on the other. Both of these extremes have been encountered in past agreements.

A related issue is whether there should be a higher body outside the zone to resolve disputes. The obvious choice would be to use the United Nations Security Council as a court of last resort. Another option would be the International Court of Justice (ICJ). The problem with the UNSC is the veto power, which makes decisions and actions difficult. The problem with recourse to the ICJ is that it requires the consent of the members, which...
could be dealt with by making it part of the reconciliation process in the treaty. In any case, compliance should be dealt with promptly and raised to high levels if necessary. Failure to do so and allowing issues to fester would undermine trust and could do damage to the regime.

The Elimination of DVs

One conclusion regarding the threat of DVs is that, if WMD were eliminated from the zone, means of delivery would not be a problem, since there would be no WMD to deliver. This could avoid difficult definitional and verification problems. However, there may be good reasons to constrain delivery vehicles, especially those of long-range, not specifically as an adjunct to WMD, but to reduce the threat generally. This could have the added benefit of reducing the incentives to pursue WMD.

The Dual-use Problem and the Issue of Intent

While it may be possible to separate weapon types from potential delivery vehicles, dual-use issues are integral to efforts to prohibit WMD. Making distinctions between conventional and nuclear warheads is discussed above. The areas of CW and BW pose even more difficult problems. Both the CWC and BWC distinguish between ‘offensive’ and ‘defensive’ purposes and between ‘peaceful’ and ‘hostile’ intent – which can be quite challenging. Important to notice is, that the same technologies and processes for many commercial chemicals can be applied to manufacture advanced CW. Laboratory work on anthrax could be claimed to be for making better vaccines, but actually be directed at creating more dangerous biological weapons. However, these widely recognized and not new problems should not be viewed as hopeless. Years of experience under both the CWC and BWC, including countries which had large programs in these areas, can guide the states of the Middle East.

Additional Verification Mechanisms

States should search for creative ways to strengthen verification and compliance mechanisms. One promising idea might be to adapt the Open Skies Treaty to the Middle East.

Endnotes

2. WMD are generally considered to include nuclear, chemical, and biological weapons. A useful addition would be radiological weapons, which are sometimes included in the general category of WMD.
Further Reading


East Zone. This treaty, which entered into force in 2002, has 34 states parties, none of which are in the Middle East. It has proven especially useful for countries without ready access to high-resolution satellite imagery. Although originally envisioned as part of the verification regime for the Conventional Armed Forces in Europe (CFE) Treaty, it has been more of a CSBM and is not actually intended to monitor any particular arms control treaty. About 100 flights occur annually, with suitable active and passive quotas for each state, depending upon its geographical area. The resolution capability of the sensors is specified and verified. Optical, infrared, and radar sensors are permitted, though only the former have been used to date. About nine different national aircraft are certified. Imagery is shared among all the parties, so a dedicated aircraft and conducting flights are not necessary to realize the benefits. The excellent weather conditions and relatively sparse vegetation in the Middle East could make some appropriate variation of this regime a valuable verification and confidence-building tool for the zone.\(^{15}\)

An existing, successful, though little known monitoring organization already operating in the Middle East is the Multilateral Force and Observers (MFO).\(^{16}\) This organization was established by Egypt and Israel to monitor security arrangements in their 1979 peace treaty. It is an independent body, not affiliated with the United Nations. The MFO has about 2,500 military and civilian personnel drawn from eleven countries, none of them in the Middle East. Its operations consist of a peacekeeping force in the portion of the Sinai closest to Israel and a Civilian Observer Unit to monitor the treaty’s force provisions throughout the Sinai and in a narrow strip of Israel. This successful operation contains obvious precedents for the future treaty. Such an organization could consist of personnel from the Middle East or outside it, or a mixture of both.

Although the states in the region must accept responsibility for what verification regime they themselves find necessary and sufficient, considerable assistance from countries and international organizations outside the zone will certainly be available. With hard work and goodwill, international experience with arms control and disarmament agreements shows that the verification tasks discussed above can be solved and weapons of mass destruction eliminated permanently from the Middle East.\(^{17}\)

About the Academic Peace Orchestra Middle East (APOME)
The Orchestra is the follow-up project of the “Multilateral Study Group on the Establishment of a Missile Free Zone in the Middle East”. The Academic Peace Orchestra Middle East is a classical Track II initiative: it consists of some 100 experts – mainly from the Middle East/Gulf, one of the most conflict-ridden areas of the world. The Orchestra is meeting regularly in working groups (Chamber Orchestra Units) on specific topics in the context of a workshop cycle from 2011-2014. The main goal of this initiative is to shape the prospective Middle East Conference on the establishment of a zone free of weapons of mass destruction and their delivery vehicles agreed upon by the international community in May 2010.

For this reason, these experts develop ideas, concepts, and background information in a series of Policy Briefs which are the results of intense discussions within the Chamber Orchestra Units. In this framework, the broader normative Cooperative Security Concept will be further developed, embedded, and institutionalized in the region. At the same time, the Orchestra meetings serve as venues for confidence building among the experts. The networking activities of PRIF’s Project Group are documented by the Atlas on Track II research activities in or about the Middle East/Gulf region.

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