

MEANS OF DELIVERY:

A COMPLEX AND EVOLVING ISSUE IN THE MIDDLE EAST WMD-FREE ZONE INITIATIVE

By Nasser bin Nasser



MIDDLE EAST WEAPONS OF MASS DESTRUCTION FREE ZONE SERIES



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*Anti-Ship Cruise Missile 'Noor' fired by Iran's Navy, Erfan Kouchari/
Tasnim News Agency, Makran, Iran, 2016.*

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LIST OF ACRONYMS

ACRS	Arms control and regional security working group
CBM	confidence-building measure
GCC	Gulf Cooperation Council
HCOC	The Hague Code of Conduct
MTCR	Missile Technology Control Regime
NPT	Non-Proliferation Treaty
UNSC	United Nations Security Council
UNSCR	United Nations Security Council Resolution
WMD	weapons of mass destruction
WMDFZ	weapons of mass destruction free zone



INTRODUCTION

United Nations Team Carries out Inspections Aimed at Disposing of Iraq's WMD Capacity, UN Photo/Pierre-Michel Virot, Iraq, 1991.

The initiative to establish a Weapons of Mass Destruction Free Zone (herein referred to as the Zone) in the Middle East is as necessary as it is elusive a goal for regional security and stability. Years of diplomatic efforts have yielded little progress due to a fundamental divergence in the positions of regional states on the objectives of such a Zone, as well as the framework and steps to achieve them. Changing political and security realities on the ground have also impeded consistent momentum towards bridging these diverging positions and have resulted in growing frustration among the states involved in this effort. The contours of such a Zone continue to be undetermined, with no agreement on fundamental questions, such as the scope, verification requirements or sequencing of actions on the elimination of chemical, biological and nuclear weapons. Likewise, there is disagreement whether the Zone is a prerequisite for regional peace and security or a product of it. These are only a sample of some of the daunting and complex questions those working towards the Zone are faced with and part of the reason why negotiations are at such an impasse.

Adding to the complexity of the Zone deliberations is the equally polarizing question concerning the inclusion of means of delivery of weapons of mass destruction (WMD) in the scope of the Zone. In this context, means of delivery, also referred to as WMD-linked delivery systems or vehicles, is generally understood to include certain classes of missiles that are capable of delivery of WMD payloads, including land-, air- or sea-launched ballistic missiles and cruise missiles; loitering munitions; drones; as well as aircraft and artillery with characteristics that make them either exclusively WMD-use or dual-use.¹ Traditionally, the limited accuracy of early ballistic and cruise missiles in the

¹ This paper interchangeably uses 'means of delivery' or 'delivery systems' for stylistic purposes. 'Dual-use', 'conventional' and 'WMD' are used to clarify which means of delivery are being referred to.

One could argue that the impact of disruptive conventional weapons such as artificial intelligence-enabled drone swarms and their growing lethality is increasingly relegating WMD to a secondary concern for regional security.

region engrained the view that they were primarily useful with payloads able to inflict wide-scale damage to compensate for their poor accuracy.² Having been described as “inextricably tied”,³ ballistic and (to a lesser extent) cruise missiles had been bundled together with WMD and tended to gain greater prominence in discussion on means of delivery. The association with ballistic missiles in particular has also been fuelled by the fact that the region has witnessed the most extensive use of ballistic missiles anywhere in the world since the end of the Second World War and a total of 11 states in the region possess them.⁴ However,

conflating WMD with ballistic missiles is becoming increasingly outdated given the ability of other platforms to carry WMD payloads, including but not limited to aerial and underwater drones, and the growing utility of ballistic missiles for conventional use (i.e. non-WMD) due to guidance and accuracy improvements as well as cost reductions. Perhaps more importantly, one could argue that the impact of disruptive conventional weapons such as artificial intelligence-enabled drone swarms and their growing lethality is increasingly relegating WMD to a secondary concern for regional security. These developments have undoubtedly created new security dynamics and further complicated deliberations on the relevance and scope of the Zone, putting it in a critical impasse.

There have been several attempts to tackle the issue of means of delivery in the region, either through international resolutions, regional initiatives, or confidence-building and transparency measures such that means of delivery have become at times inextricably part of the possible scope and mandate of the Zone. Nonetheless, there are numerous areas of disagreement over means of delivery, beginning with definitional issues about what would fall under that rubric. Likewise, questions loom over whether they should be considered a weapon category in and of themselves, thereby requiring elimination to realize the Zone, or whether they become a moot point in the Zone if WMD are already eliminated. Additionally, it is unclear whether means of delivery would be dealt with as part of the Zone, in parallel, or in a particular sequence. Diplomats, legal and other experts can satisfactorily argue all sides of this argument. Admittedly, few states have even paid significant attention to WMD means of delivery and appear to be assigning greater concern to conventional ones. Meanwhile, so far the Zone mostly focused on WMD and less so on means of delivery.

Stemming from the belief that it should be left to states party to the Zone⁵ to decide how means of delivery should be tackled, this paper will avoid being prescriptive. Instead, this paper attempts to lay the intellectual and practical basis for this rapidly changing arms-related situation in the region and the possibility that means of delivery could become a more prominent issue because of the growing concerns with their conventional applications. Accordingly, this paper seeks to (1) examine the history of means of delivery in the context of the Zone, (2) capture and assess whatever regional perspectives and concerns

2 Hassan Elbahtimy, “Ballistic and cruise missiles in the Middle East: The current landscape and options for arms control,” International Institute for Strategic Studies, January 2022, <https://www.iiss.org/blogs/research-paper/2022/01/ballistic-and-cruise-missiles-in-the-middle-east>.

3 Bernd W. Kubbig, “Coping with military asymmetries in the Middle East: A framework for missile-related confidence- and security-building measures,” in *WMD Arms Control in the Middle East: Prospects, Obstacles and Options*, eds. Harald Müller and Danial Müller (Surrey: Ashgate Publishing Company, 2015), 232.

4 Tomisha Bino, “A Middle Eastern WMD-Free Zone: Are we any closer now?” *Arms Control Today* (September 2020), <https://www.armscontrol.org/act/2020-09/features/middle-eastern-wmd-free-zone-we-any-closer-now>.

5 The current working definition of the geographical delineation of the Zone include the 22 members of the League of Arab States, the Islamic Republic of Iran and Israel.

exist regarding their inclusion in the Zone, and (3) present options for states to consider if and when deliberating on this issue. While it is undisputable that means of delivery in the context of the Zone strictly refers to WMD means of delivery, most means of delivery can carry both WMD and conventional weapons (i.e., they are dual use). The paper will make these distinctions where necessary for clarity.⁶

The paper is divided into three sections. The first section reviews the international legal and diplomatic foundation for discussing means of delivery in the context of the Zone including United Nations Security Council (UNSC) resolutions, regional initiatives and documents relevant to the Zone that specifically refer to means of delivery as well as provide context and background about their reference. The section also highlights the historical and legal evolution of how means of delivery came to be part of the Zone. This will be accomplished by a review of said resolutions and initiatives as well as a summary of some of the areas of disagreement concerning them. The section will also address the changing weapons capabilities in the region and how this could influence the interest in means of delivery.

The second section provides a brief history of the operational status and military value of means of delivery in the region, illustrating how they have become so integral to the region's arms situation. The section will also attempt to collate the positions of states of the region on means of delivery and offer some analysis to better understand and explain them in light of threat perceptions and national security concerns. In some respects, and as alluded to prior, where states of the region did not have clearly stated positions on how means of delivery are to be addressed in the context of the Zone—some deduction, inference and generalization were required.

The third section highlights the available and plausible options, contours and mechanisms for future controls on means of delivery. This section will seek to explain and assess each briefly. Ultimately, it will be up to states of the region to explore their viability and suitability once a scope for means of delivery is agreed upon.

It is hoped that this paper will provide for a better understanding of some of the complex issues at play insofar as means of delivery are concerned, as well as highlight the potential options going forward. The paper highlights areas of convergence that could be identified and subsequently built upon, although they are few and far between, as well as points of divergence that need to be bridged if states of the region decide to address the threat of means of delivery within the Zone or through separate measures.

⁶ The only means of delivery exclusively serving the purpose of WMD delivery is believed to be Israel's Jericho missile system.

There have been several attempts to tackle the issue of means of delivery in the region, either through international resolutions, regional initiatives, or confidence-building and transparency measures such that means of delivery have become at times inextricably part of the possible scope and mandate of the Middle East WMD-Free Zone



Partially destroyed building which housed the ammonium perchlorate machine at Taj al-Ma'arik, UN Photo/H. Arvidsson, Iraq, 1992.

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HISTORICAL OVERVIEW AND FUTURE OUTLOOK

7 Means of delivery was mentioned in the preamble of the resolution adopted by the UN General Assembly entitled “Establishment of a nuclear weapons-free zone in the region of the Middle East”, submitted by the Islamic Republic of Iran and Egypt in 1974. The language in the preamble considered the goal of the “total destruction of all nuclear weapons and their means of delivery”. Means of delivery did not appear in the operative paragraphs of the resolution.

8 United Nations Security Council, S/RES/687, para. 14, 8 April 1991, <https://www.un.org/Depts/unmovic/documents/687.pdf>.

9 Ibid, para. 8b.

10 “White House fact sheet on the Middle East arms control initiative,” 29 May 1991, <https://www.presidency.ucsb.edu/documents/white-house-fact-sheet-the-middle-east-arms-control-initiative>.

11 George H.W. Bush, “Address before a joint session of congress on the end of the Gulf War,” 6 March 1991, <https://millercenter.org/the-presidency/presidential-speeches/march-6-1991-address-joint-session-congress-end-gulf-war>.

The 1990s saw multiple international and regional efforts to address means of delivery, which were likely prompted by the war between Iraq and the Islamic Republic of Iran, the first Gulf War, and Arab–Israeli peace treaties.⁷ Motivated by and focused on the elimination of Iraq’s WMD and ballistic missiles, the conclusion of the Gulf War in 1991 saw the adoption of UNSC Resolution (UNSCR) 687, which noted the goal of “establishing in the Middle East a zone free from weapons of mass destruction and all missiles for their delivery”⁸ and mandated the destruction of Iraq’s ballistic missiles with a range greater than 150 km.⁹ UNSCR 687 also dovetailed with a US arms control initiative announced by President George H.W. Bush in May of that same year, which proposed a freeze on the acquisition, production and testing of surface-to-surface ballistic missiles by states of the region, with a view to their ultimate elimination from national arsenals.¹⁰ At his address before a joint session of the United States Congress on the occasion of the end of the Gulf War a few months prior, President Bush singled out means of delivery when he identified the objective to “control the proliferation of weapons of mass destruction and the missiles used to deliver them” as one component of a three-point strategy to address security in the Middle East.¹¹ That initiative and UNSCR 687 defined means of delivery as surface-to-surface ballistic missiles, undoubtedly as a response to their use by Iraq during the Gulf War and possibly during the preceding war with Iran.

The first mention of WMD and means of delivery in international resolutions in the context of the Zone came at the 1995 Review and Extension Conference of the Treaty on the Non-Proliferation of Nuclear Weapons where a resolution



was adopted calling for the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems.¹² That phrasing was informed by the deliberations of the 1990s Arms Control and Regional Security Working Group on the scope of the Zone.¹³

The next effort focusing on means of delivery, UNSCR 1540 of 2004, was motivated by concerns regarding the acquisition of WMD material by non-State actors and the discovery of informal proliferation networks such as the A.Q. Khan network. UNSCR 1540 required all states to “adopt and enforce appropriate effective laws which prohibit any non-State actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery”.¹⁴ The resolution was the first instance that elaborated and defined means of delivery as “missiles, rockets and other unmanned systems capable of delivering nuclear, chemical, or biological weapons that are specially designed for such use”.¹⁵ Manned systems capable of WMD delivery such as attack aircraft are excluded from its scope.

Regional efforts concerning means of delivery also largely took place in the 1990s. In April 1990, five months prior to Iraq’s invasion of Kuwait, an Egyptian-led initiative, known as the ‘Mubarak initiative’, proposed to expand the scope of a Middle East nuclear-weapon-free zone to also cover chemical and biological weapons, and to call for states of the region to eliminate all WMD; the initiative made no mention of means of

12 “Resolution on the Middle East,” NPT/CONF.1995/32 (Part I), annex, May 1995, <https://unidir.org/node/5643>.

13 During these deliberations Egypt, Israel and the United States discussed the issue in the context of the draft Declaration of Principles. Egypt at the time called for the “establishing a zone free of all weapons of mass destruction including nuclear, chemical, and biological weapons and their delivery systems since such weapons, with high destructive capacity and their potential to exacerbate the arms race in the region, pose the greatest threat to security”. The US version called for “establishing the Middle East as a zone free of all weapons of mass destruction and their delivery systems—since such weapons, with their high destructive capacity, pose a great threat to security”, and the Israeli version called for “establishing the Middle East as a mutually verifiable zone from nuclear, chemical, biological and ballistic missiles in view of their high destructive capacity”. While this was the only paragraph that all sides could not agree on, the main disagreements were over another part of the paragraph; see Shai Feldman, *Nuclear Weapons and Arms Control in the Middle East*, (Cambridge: MIT Press, 1997), annex 13.

14 United Nations Security Council, Resolution 1540, S/RES/1540, para. 2, 28 April 2004, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N04/328/43/pdf/N0432843.pdf>.

15 *Ibid*, definitions footnote.

16 "Letter dated 16 April 1990 from the Permanent Representative of Egypt to the United Nations addressed to the Secretary-General," A/45/219-S/21252, 18 April 1990, <https://undir.org/node/5633>.

17 "Letter dated 29 July 1991 from the Chargé d'affaires a.i. of the Permanent Mission of Egypt to the United Nations addressed to the Secretary-General," A/46/329-S/22855, 30 July 1991, <https://undir.org/node/5639>.

18 Except for Iraq, the Islamic Republic of Iran, Libya and the Sudan who were not invited.

19 Bino, "A Middle Eastern WMD-Free Zone."

20 UN General Assembly, "Resolutions and Decisions," A/73/49 (vol. II), 18 February 2019, <https://undir.org/node/5664>.

21 UN General Assembly, "Report of the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction on the work of its first session," A/CONF.236/6, 28 November 2019, <https://digitallibrary.un.org/record/3838534>; and UN General Assembly, "Report of the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction on the work of its second session," A/CONF.236/2021/4, 3 December 2021, <https://digitallibrary.un.org/record/3951238>.

22 "Missile Technology Control Regime (MTCR) Frequently Asked Questions Fact Sheet," US Department of State, Bureau of International Security and Nonproliferation, <https://www.state.gov/remarks-and-releases-bureau-of-international-security-and-nonproliferation/missile-technology-control-regime-mtcr-frequently-asked-questions/>.

23 "Israel submarine capabilities," The Nuclear Threat Initiative, 29 July 2015, <https://www.nti.org/analysis/articles/israel-submarine-capabilities/>.

delivery.¹⁶ In a letter subsequently sent to the United Nations Secretary-General a year later (dated July 1991), Egypt included additional proposals that called on states of the Middle East to "declare their commitment actively and fairly to address measures relating to all forms of delivery systems for WMD".¹⁷ Given that the letter was sent following the adoption of UNSCR 687 and the Bush initiative, it is likely that it came in response to them.

The Working Group on Arms Control and Regional Security that was formed as part of the multilateral discussions on Middle East peace in Madrid in 1991 was the first forum outside of the context of the United Nations for states of the region¹⁸ to meet directly to discuss regional security arrangements. The Working Group held discussions on confidence-building and transparency measures such as pre-notification of missile test launches and even a proposal for missile test monitoring activities, but the negotiations broke down before progress was achieved on these ideas due to disagreement over when the nuclear issue would be put on the agenda.¹⁹ Notably, the Working Group was partly motivated by a need to build requisite regional capacities for meaningful arms control negotiations and cooperation, a requirement that persists to this day.

Most recently, participants in the Conference on the Establishment of a Middle East Zone Free of Nuclear Weapons and Other Weapons of Mass Destruction, which held its first and second sessions in November 2019 and 2021, respectively, did not include any explicit mention of means of delivery in the decision to hold the conference.²⁰ This includes the political declaration, or the Final Report of the first or second sessions,²¹ although the 2018 decision to establish the process took its terms of reference from the 1995 Resolution on the Middle East, which does include delivery systems.

International Instruments

Regional efforts often were informed or attempted to complement international measures to control certain classes of weapons. The first international attempt to deal with missiles came in 1987 when States of the G7 launched the voluntary Missile Technology Control Regime (MTCR), whose 35 members subsequently agreed to restrict exports of missiles and related technologies capable of carrying a 500 kg payload at least 300 km or delivering any type of WMD.²² Though MTCR clearly defined the payload and distance of the missiles subject to the regime, it excluded manned systems capable of WMD delivery such as attack aircraft and did not prevent its members from exporting ancillary systems to WMD-delivery systems. For instance, Germany's membership did not prevent it from exporting to Israel Dolphin-class submarines, which can carry cruise missiles that are believed to be equipped with nuclear warheads thus offering Israel an offshore nuclear strike capability.²³ While MTCR is generally credited with improving the export regulations of missile-producing states, and may have prevented the further transfer of such technologies to states of the Middle East, the regime does not impose any legally binding obligations on its members.



Israel's Navy Ship Dolphin submarine, Shlomit, Israel, 2010.

Another international effort to deal with means of delivery is a multilateral transparency and confidence-building instrument, The Hague Code of Conduct (HCoC), which was adopted in 2002. Under the Code, subscribing states commit themselves to provide pre-launch notifications on ballistic missile and space-launch vehicle launches and test flights. They also commit themselves to submit an annual declaration of their national policies on ballistic missiles and space-launch vehicles. Like the MTCR, HCoC is not specific to the Middle East, nor legally binding, and is concerned with ballistic missiles and space-launch vehicles only. Unlike the MTCR, the Code applies to all forms of ballistic missiles without exception (i.e., regardless of range or payload). Iraq, Jordan, Libya, Mauritania, Morocco and Tunisia are states of the region subscribing to the Code.

As can be discerned from the above, there are numerous and different definitions of 'means of delivery' that the Zone can draw on. Likewise, different definitions could offer states and experts ample opportunities to disagree over interpretation. One argument is that the Zone could prohibit all means of delivery, whether terrestrial, naval or atmospheric, that are capable of carrying a WMD payload. The shortcoming of this proposal is that many conventional weapons such as aircraft, drones or any missiles including rockets could have a dual-use application (i.e., WMD and conventional). While missiles and WMD were closely linked in the past, that is not the case today as WMD have been successfully mounted on a range

One argument is that the Zone could prohibit all means of delivery, whether terrestrial, naval or atmospheric, that are capable of carrying a WMD payload. The shortcoming of this proposal is that many conventional weapons such as aircraft, drones or any missiles including rockets could have a dual-use application (i.e., WMD and conventional)

Some hold that means of delivery could become a moot issue in the context of the Zone once WMD are eliminated from the region. Others suggest that focusing efforts on eliminating means of delivery first could render WMD-related discussions easier

of other platforms, making any prohibition on only WMD-related systems harder to be implement. The growing utility of delivery systems such as cruise missiles, drones and ballistic missiles apart from a WMD application only adds additional complexities to the issue of an outright ban on all delivery systems.

Another argument would be to adopt an approach that places restraints and limitations on specific characteristics of means of delivery such as range, payload and accuracy, but these too would probably face definitional contentions on what should be limited or prohibited. Furthermore, parameters of the restrictions are unclear; for instance, would they

include production capability, assembly kits, subsystems and/or components? The issue of what activities are considered to be weaponization is a common problem afflicting global non-proliferation efforts and work on the Zone is no exception. This very issue may have catalysed parties of the Joint Comprehensive Plan of Action to clearly define and include in the agreement what activities are considered weaponization.²⁴

Other issues, akin to that of WMD elimination, include the mechanisms that would need to be in place to verify and implement such restrictions and/or eliminations as well as the sequence regarding the elimination of WMD and means of delivery. As noted, while means of delivery are not considered WMD, they are included within the scope and mandate of the 1995 Resolution on the Middle East, but it is unclear whether this implies they would be treated as a stand-alone pillar. Some regional states hold that means of delivery could become a moot issue in the context of the Zone once WMD are eliminated from the region. Alternatively, it is part of the 1995 Middle East Resolution and the suggestion to focus efforts on eliminating means of delivery first could gradually render WMD-related discussions easier, as some have previously suggested.²⁵ Under such a scenario, it is believed that means of delivery would effectively act as an entry point for broader security-related discussions, including but not limited to potential understandings or compromise on WMD.²⁶

²⁴ Section T of annex I for example specifically outlines the “activities which could contribute to the design and development of a nuclear explosive device”; see the Joint Comprehensive Plan of Action, 14 July 2015, 45, <https://www.europarl.europa.eu/cmsdata/122460/full-text-of-the-iran-nuclear-deal.pdf>.

²⁵ Michael Elleman, “Banning long-range missiles in the Middle East: A first step for regional arms control,” *Arms Control Today*, (May 2012), <https://www.armscontrol.org/act/2012-05/banning-long-range-missiles-middle-east-first-step-regional-arms-control>.

²⁶ Gawdat Bahgat et al., “Applying Missile-related Confidence- and Security-building Measures in the Middle East: The Challenges in the Israeli–Egyptian and Israeli–GCC Relationship,” *Academic Peace Orchestra Middle East*, no. 21–22, (October 2013), http://academicpeaceorchestra.com/?p=policybriefs#pb_21.

Future Outlook

Means of delivery-related threats are evolving, increasing in complexity, and leading to new security dynamics in the region. This is largely a result of technological advances in delivery systems, both conventional and WMD. First, the increased range, reliability and accuracy of ballistic and cruise missiles and rockets, due to advances in propulsion, propellants, advanced materials and miniaturized electronics—as well as their affordability—has increased their proliferation and their utility for conventional use. Second, advances in missile defence systems appear to be fuelling a delivery systems arms race under the rationale that enhanced defences increase the importance of, and in turn investment in, first-strike capabilities. Third, non-state actors can now

themselves produce some missiles and rockets.²⁷ Lastly, and perhaps most importantly, is the introduction of disruptive conventional systems, including but not limited to drones, their associated armaments and role in military operations, as well as the lowered cost structure for their acquisition and domestic production.²⁸ In a related matter, the growing lethality of such systems, and in some cases their potentially indiscriminate nature (e.g., artificial intelligence-enabled drone swarms), is also a major technological development; lethality and indiscrimination being key attributes of WMD.

Against the backdrop of what could be described as a revolution in military affairs and the new security dynamics that means of delivery have created, their WMD-related utility appear as though they are increasingly relegated to a secondary concern for the region. If recent regional uses provide any indication of future trends, combined drone and cruise/ballistic missile attacks are likely to become the common threat.²⁹ This may inadvertently shift focus of states of the region to means of delivery. The rationale is that interest in conventional systems may prompt the international community to push for restrictions, controls and norm-building for conventional systems, which could in turn also advance the Zone objectives or at least have positive ripple effects on them.

Tackling the issue of means of delivery has been one of the most unexplored areas of discussions on the Zone. That situation is compounded by the fact that capacities to engage in such a dialogue or process are uneven across the region. Given that states of the region are becoming increasingly interested in the threat posed by conventional weapons, Zone proponents will have to decide how to address them, and which definitions to choose or to develop themselves. There are numerous references to means of delivery in international resolutions, regional initiatives and elsewhere that states of the region can build upon (see Summary: Means of Delivery in Regional and International Documents). Once and if such a feat is realized, other challenges would have to be addressed, including the sequence of means of delivery in relation to other WMD and an agreement on a verification mechanism—challenges that are no less difficult.

Means of delivery-related threats are evolving, increasing in complexity and leading to new security dynamics in the region

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²⁷ According to the International Institute for Strategic Studies most recent estimates, ‘the Islamic Republic of Iran seeks to enable its proxies “to autonomously manufacture artillery rockets and precision-guided missiles” as well as to create “simple artillery rockets and short-range-missile systems and production units custom-tailored for local production” in order to ensure continued supply in the event that future weapon transfers are no longer possible; Fabian Hinz, “Missile Multinational: Iran’s New Approach to Missile Proliferation,” The International Institute for Strategic Studies, (April 2021), 3, <https://www.iiss.org/blogs/research-paper/2021/04/iran-missile-proliferation-strategy>.

²⁸ Turkey, Israel and the Islamic Republic of Iran all have significant domestic production capabilities which diminishes the utility of export controls on such weapon systems.

²⁹ The Iran Project and European Leadership Network, Ballistic Missiles and Middle East Security: An Alternative Approach, 27 January 2022, 14, <https://www.europeanleadershipnetwork.org/report/ballistic-missiles-and-middle-east-security-an-alternative-approach/>.

Summary: Means of Delivery in Regional and International Documents

1987

Measure
Missile Technology Control Regime

Voluntary export control regime comprising 35 members who agreed to restrict exports of missiles and related technologies capable of carrying a 500 kg payload at least 300 km or delivering any type of WMD; excludes manned systems

1991

Measure
Resolution 687

A zone free from weapons of mass destruction and all missiles for their delivery, defined as surface-to-surface ballistic missiles with a range over 150 km

1990

Measure
Mubarak initiative

Proposed elimination of WMD; subsequently in 1991 included additional proposals that called on states of the Middle East to "declare their commitment actively and fairly to address measures relating to all forms of delivery systems" for WMD

1991

Measure
Bush initiative

Proposed a freeze on the acquisition, production and testing of surface-to-surface missiles

1995

Measure

**Resolution on
the Middle East**

Resolution calling for the establishment of an effectively verifiable Middle East zone free of weapons of mass destruction, nuclear, chemical and biological, and their delivery systems

2002

Measure

**The Hague Code
of Conduct**

Subscribing states commit themselves to provide pre-launch notifications on ballistic missile and space-launch vehicle launches and test flights; they also commit themselves to submit an annual declaration of their policies on ballistic missiles and space-launch vehicles; applies to ballistic missiles and space-launch vehicles only

2004

Measure

Resolution 1540

Requires all states to “adopt and enforce appropriate effective laws which prohibit any non-state actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical or biological weapons and their means of delivery”; means of delivery were subsequently defined as missiles, rockets and other unmanned systems capable of delivering nuclear, chemical or biological weapons, that are specially designed for such use



ISIL forces prepare to fire a captured TOW anti-tank missile near Homs, Handout / Alamy Stock Photo, Syria, 2016.

2

THREAT PERCEPTIONS AND POSITIONS ON MEANS OF DELIVERY

30 The Iran Project and European Leadership Network, *Ballistic Missiles and Middle East Security*, 14.

31 *Ibid.*, 16, and Elbahtimy, "Ballistic and cruise missiles in the Middle East".

32 Missile Defense Project, "Jericho 3" Missile Threat, Center for Strategic and International Studies, 28 July 2021, <https://missilethreat.csis.org/missile/jericho-3/>.

33 The Iran Project and European Leadership Network, *Ballistic Missiles and Middle East Security*, 20.

34 UN Secretary-General, "Report of the United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic on the alleged use of chemical weapons in the Ghouta area of Damascus on 21 August 2013", A/67/997-S/2013/553, 16 September 2013, <https://digitallibrary.un.org/record/756814>.

34 "Iraq's Missile Program Profile," Wisconsin Project on Nuclear Arms Control, 1 January 1999, <https://www.wisconsinproject.org/iraqs-missile-program-profile/>.

36 The Iran Project and European Leadership Network, *Ballistic Missiles and Middle East Security*, 14.

37 Elbahtimy, "Ballistic and cruise missiles in the Middle East".

38 The Iran Project and European Leadership Network, *Ballistic Missiles and Middle East Security*, 6.

39 *Ibid.*, 16.

Ballistic and other missiles have featured prominently in the region's historical conflicts and continue to be a major feature of the national defence strategies of Middle Eastern states and the security landscape of the region. Every military conflict in the Middle East since the Second World War has included the use of military aircraft and artillery rockets, and nine regional conflicts featured ballistic missile attacks.³⁰ Rockets are also used by non-state actors across the region, such as Hamas, Hezbollah, Houthis and ISIL. Armed drones have also been widely used in recent years. There are 11 states in the Middle East with ballistic or cruise missiles with ranges of over 250 km. These states account for nearly half of the total states globally that possess either ballistic or cruise missiles.³¹ Israel is believed to have the most advanced stockpile of missiles in the region, including nuclear-armed ballistic missiles with a range of 4,800–6,500 km³² as well as submarine-launched cruise missiles.³³ The Syrian Arab Republic is suspected,³⁴ and Iraq is confirmed,³⁵ to have armed their rockets and ballistic missiles with chemical weapons in the past. The Houthis are the only non-state actor known to operate cruise missiles,³⁶ while both the Houthis and Hezbollah are the only non-state actors believed to possess ballistic missiles. Hamas, on the other hand, possesses rockets and artillery.³⁷ Five states in the region possess cruise missiles: Egypt, Iran, Israel, Saudi Arabia and the United Arab Emirates.³⁸ Israel and Iran are believed to have satellite launch vehicles that provide a basis to develop intercontinental ballistic missiles.³⁹ All states of the region have



attack aircraft, though capabilities and fleet size drastically differ. States in possession of armed drones are continuously increasing.⁴⁰

Current snapshot

Most states of the region have adopted 'missile-centric' defence postures. This stems from multifaceted threat perceptions linked with intractable security dilemmas and conflicts. While the region has the largest number of states possessing ballistic missiles, the operational status and military value of these systems vary from one state to another.⁴¹ For instance, Iran considers ballistic missiles and, more recently, armed drones as key pillars of its conventional defence and deterrence strategies because they possess an antiquated, sanctioned and underfunded air force.⁴² Even states that once possessed sizeable air forces, such as Syria, are believed to consider ballistic missiles a cost-effective method to offset their adversary's air superiority.⁴³ Some states have also pursued ballistic missiles more to maintain military balance with adversaries and less for purposes of operational utility. States that allegedly transfer rockets and missiles to non-state actors, such as Iran, are also motivated by deterrence strategies that seek to harm adversaries with some level of deniability in order to lower the risk of retaliation.⁴⁴ Israel maintains multiple means of delivery to diversify and hedge against multiple and

40 Aniseh Bassiri Tabrizi and Justin Bronk, "Armed drones in the Middle East," Royal United Services Institute (RUSI), December 2018, <https://rusi.org/explore-our-research/publications/occasional-papers/armed-drones-middle-east-proliferation-and-norms-region>.

41 Stéphane Delory, "The dynamics of missile proliferation in the Middle East and North Africa," in *WMD Arms Control in the Middle East: Prospects, Obstacles and Options*, eds. Harald Müller and Danial Müller (Surrey: Ashgate Publishing Company, 2015), 194.

42 The Iran Project and European Leadership Network, *Ballistic Missiles and Middle East Security*, 7.

43 *Ibid.*, 19.

44 Hinz, "Iran's new approach to missile proliferation," 10.

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Most states of the region have adopted 'missile-centric' defence postures. This stems from multifaceted threat perceptions linked with intractable security dilemmas and conflicts.

45 Mark Fitzpatrick, "Israel's ballistic-missile programme: An overview," International Institute for Strategic Studies, 25 August 2021, <https://www.iiss.org/blogs/analysis/2021/08/israel-ballistic-missile-programme#:~:text=Israel's%20strategic%20deterrence%20includes%20several,which%20little%20is%20publicly%20acknowledged.>

46 See, for example, Veblen analysis of military spending which is loosely defined as spending whose logic transcends the strategic realm of military defined pursuits. See James M. Cypher, "Military spending, technical change and economic growth: A disguised form of industrial policy?" *Journal of Economic Issues* 21, no. 1 (March 1987), <https://www.jstor.org/stable/4225815>.

47 Udi Dekel, "A Multi-Arena Missile Attack that Disrupts Israel's Defense and Resilience Pillars," in *Existential Threat Scenarios to the State of Israel*, ed. Ofir Winter (Tel Aviv: Institute for National Security Studies, 2020), 69–70, <https://www.inss.org.il/publication/nothing-is-forever/>.

48 Jeremy Issacharof, "Nonproliferation and regional security: An Israeli policy perspective," in *The Nuclear Nonproliferation Regime at a Crossroads*, eds. Emily B. Landau and Azriel Bermant (Tel Aviv: Institute for National Security Studies, 2014), 196–197, <https://www.inss.org.il/nuclear-nonproliferation-regime-crossroads/>.

49 Eran Lerman, "It was a good idea, it was a very bad idea: Israel's incentives and disincentives in the Middle East WMD-free zone process," in *Perspectives, Drivers, and Objectives for the ME WMD-free zone*, eds. Tomisha Bino, James Revill and Chen Zak Kane (Geneva: UNIDIR, 2022), <https://unidir.org/publication/perspectives-drivers-and-objectives-middle-east-wmd-free-zone-voices-region>.

unexpected vulnerabilities.⁴⁵ Other motivations to maintain or acquire delivery systems where there is little operational utility, including instances where states are motivated by a need to cement political and security relationships or to demonstrate independence or defiance in such a relationship, by a desire to bolster status as a regional power, or by other interests beyond strategic utility.⁴⁶

Regional reactions

Not much is publicly available on the reaction and interest of states of the region towards any proposed

controls, process, or dialogue on WMD means of delivery, but these are not hard to imagine. The section below analyses the perceptions of some of the key states in the debate, bearing in mind that when information is lacking regarding their official positions, they are inferred based on their positions on conventional means of delivery.

Israel

Israeli officials say that they increasingly view missiles as an existential threat and claim their cumulative potential is approaching unacceptable damage.⁴⁷ Israel's interest in tackling delivery systems belonging to other states of the region, such as Egypt and the States of the Gulf Cooperation Council (GCC), is likely secondary to its prioritization of Iran. Israel would likely be interested in restrictions on Iran in the following areas: stopping the transfer of delivery systems to non-state actors; limiting the payload or accuracy of Iranian delivery systems, and prohibiting the targeting of Israeli civilian strategic facilities and population centres.

Israel would likely prefer to achieve any of these objectives through international pressure on Iran rather than engage with it in a direct or regional diplomatic process, whether as part of the Zone or a separate process. This is largely to avoid the need to agree to reciprocal limitations on its own capabilities. As for the GCC States, while bolstering the capabilities of Saudi Arabia and the United Arab Emirates, for example, serves to pressure Iran, Israel's likely preference would be for GCC States to focus on missile defence so that potentially WMD-capable delivery systems do not further proliferate in the region.

Israel has typically preferred to have an open-ended process where regional security concerns can be discussed more broadly so that peace and conventional threats could be addressed before WMD.⁴⁸ Other Israeli hesitations to engage in such a process are to avoid a precedent of making concessions or undermining its traditional policy of ambiguity and opacity regarding its own arsenal. Were Israel to agree to a diplomatic process focused on means of delivery, it would also likely seek to achieve other diplomatic objectives, such as normalizing relations and de-escalating tensions.⁴⁹ Given Israel's negative perception and scepticism of arms control processes, and its refusal to attend the United Nations conference on the establishment of the Zone, where it perceives itself to be

outnumbered and the current process to be flawed,⁵⁰ it may have a preference for bilateral and regional security arrangements and tacit understandings prior to any negotiations.

Iran

Iran's interest in tackling delivery systems to limit capabilities of other states of the region is likely also secondary to its prioritization of limiting Israel's capabilities.⁵¹ Iran would in principle be interested in restrictions that prohibit Israel's targeting of facilities related to its nuclear programme. It would also likely want to see restrictions on the payload and accuracy of delivery systems of GCC States. Iran has already adopted a self-imposed 2,000 km limit on the range of its own missiles,⁵² nonetheless, many states of the region lie within this range.

Iran is generally not as averse as Israel to international or multilateral processes to address means of delivery, though it would likely be averse to one that is not reciprocal and is solely focused on its own capabilities. Iranian officials appear to believe that equating means of delivery with ballistic missiles, while excluding other systems such as attack aircraft, is meant to single out Iran among the other states of the region and to undermine its ability to protect itself and project power. Iranian officials have indicated that they would refuse to include delivery systems in the negotiations on the Joint Comprehensive Plan of Action or connect both issues.⁵³ This is likely because Iran lacks any other effective defensive and offensive alternatives to its missiles capabilities (such as an air force) and it could lose its main conventional strength against adversaries. Iran has made clear that it will refuse to negotiate with Israel in a non-United Nations context, which leaves a United Nations-led or -sponsored process as the only option through which Iran would agree to engage diplomatically and regionally on means of delivery.

Iran could seek to leverage the possibility of dialogue on delivery systems as a bargaining strategy for other diplomatic gains but, like Israel, would be generally adamant against making concessions. This is especially the case at this juncture when Iran considers itself in a position of strength and has demonstrated economic resilience in light of sanctions—and given its lack of effective military alternatives to its missiles. There are two other dynamics impacting Iran's willingness to engage in such a process. First, the ease with which the Trump administration withdrew from the Joint Comprehensive Plan of Action has undoubtedly impacted its calculus. As a result, Iran may seek to ensure that a future agreement is more formal or legally binding, or for which the cost of reneging is high. Second, Iran no longer needs to transfer weapons to proxies in the same volume that it once did considering the growing production capabilities of such actors.⁵⁴ This means that Iran could still target Israel, Saudi Arabia and the United Arab Emirates through its proxy network without the need to transfer weaponry like it did previously. Likewise, it could publicly make commitments not to target population centres in these countries while distancing itself from any actions of their proxies to the contrary (notwithstanding whether they are in control of the decision-making of their

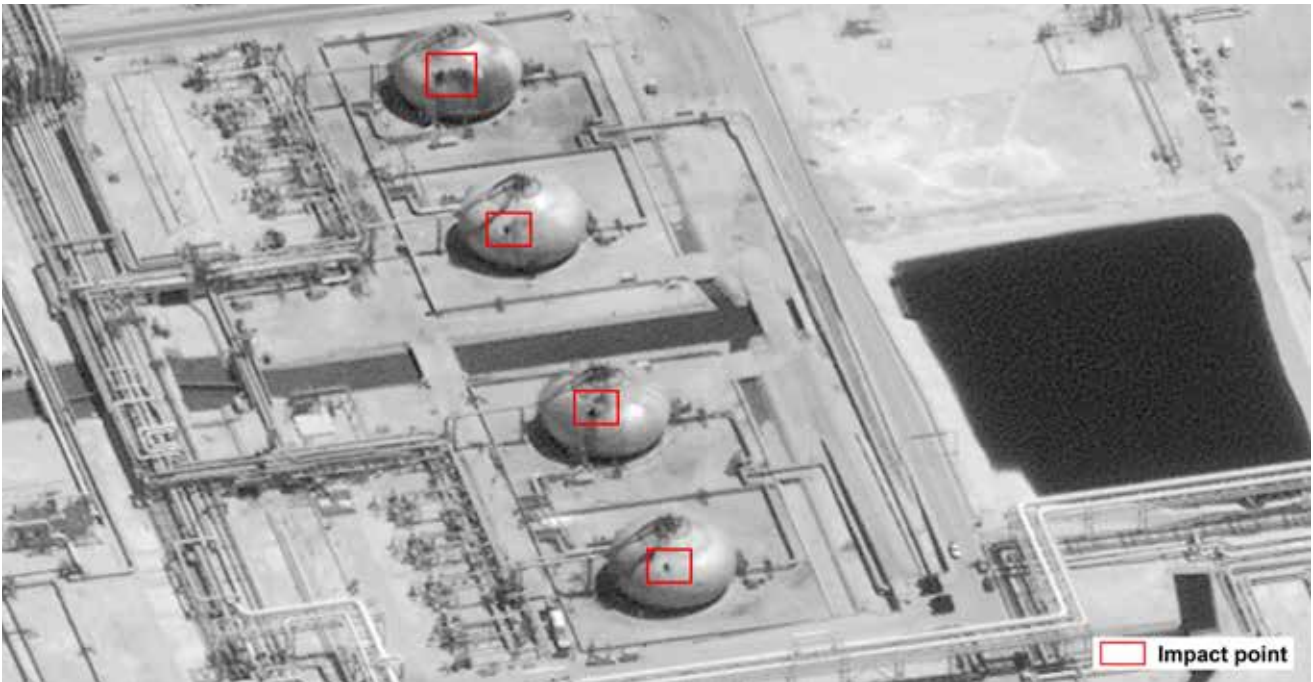
50 See Israel's statement to the General Assembly, A/C.1/73/PV.9, 17 October 2018, 8–9, <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N18/325/12/pdf/N1832512.pdf>

51 This paper only covers threats perceived within the region and not any of Iran's eastern neighbours for instance.

52 Kelsey Davenport, "Iran's leader sets missile range limit," Arms Control Today 48, no. 10 (December 2017), <https://www.armscontrol.org/act/2017-12/news/iran%E2%80%99s-leader-sets-missile-range-limit>.

53 Omar Al-Ubaydli, "Expanding the scope of the JCPOA might serve Iran's best interests," Alarabiya News, 22 November 2021, <https://english.alarabiya.net/views/2021/11/21/Expanding-the-scope-of-the-JCPOA-might-serve-Iran-s-best-interests>.

54 Danny Citrinowicz, "After Soleimani, is Iran losing control of its proxies?", Fathom, February 2022, <https://fathomjournal.org/after-soleimani-is-iran-losing-control-of-its-proxies/>.



Damage caused by a drone attack on Saudi Aramco's Abaqaiq oil processing facility, U.S. Government/ DigitalGlobe/ UPI, Saudi Arabia, 2019.

55 Marwa Rashad and Raya Jalabi, "Gulf states: Nuclear talks should Address Iran missile programme," Reuters, 17 June 2020, <https://www.reuters.com/world/middle-east/gcc-foreign-ministers-iran-missile-programme-should-be-addressed-nuclear-talks-2021-06-16/>.

56 The GCC–Islamic Republic of Iran conferences being held in Baghdad could be one example where informal arrangements are reached. Five rounds of talks have been held between Saudi Arabia and the Islamic Republic of Iran in Baghdad, the last being held in April 21, 2022; see Ali Mamouri, "Iraq helps broker Iran-Saudi negotiations," Al-Monitor, 28 April 2022, <https://www.al-monitor.com/originals/2022/04/iraq-helps-broker-iran-saudi-negotiations>; Dina Esfandiary and Ali Vaez, "Turning engagement into regional dialogue mechanism in the Middle East," World Politics Review, 15 June 2021, <https://www.worldpoliticsreview.com/the-many-paths-to-preventing-a-middle-east-war/?share=email&messages%5B0%5D=one-time-read-success>; and A time for talks: Towards dialogue between the Gulf Arab states and Iran, (Brussels: International Crisis Group, 2021), <https://www.crisisgroup.org/middle-east-north-africa/gulf-and-arabian-peninsula/226-time-talks-toward-dialogue-between-gulf-arab-states-and-iran>.

proxies). Tacit Iranian and Israeli bilateral understandings on specific limitations or constraints may address the two states' threat perceptions in regard to each other but may not satisfy the threat perceptions of GCC States with regard to Iranian delivery systems, specifically short-range missiles and rockets.

GCC States

Like Israel, GCC States, specifically Bahrain, Saudi Arabia and the United Arab Emirates also likely believe that the threat posed by Iranian delivery systems is serious and grave.⁵⁵ They would likely accordingly welcome a process focused on means of delivery that addresses transfer to non-state actors, limits payload and accuracy, and avoids the targeting of strategic civilian facilities and population centres. Any of these states could potentially agree to make their own concessions or commitments on means of delivery as part of a series of reciprocal concessions or commitments because they have effective alternatives (particularly growing number and capacity of attack aircraft among GCC states). It is yet to be seen whether GCC states would prefer a formal process or an informal arrangement.⁵⁶ It is equally unclear whether GCC States would prefer a process to address Iran's means of delivery independent from that on the Zone, where Egypt has traditionally played a dominant role, or alternatively addressing their threat perception on Iran's means of delivery into that on the Zone in order to leverage Egypt's diplomatic weight. There are other dynamics impacting the GCC States' willingness to engage in a process to address their threat perceptions regarding means of delivery, including whether they could secure more formal security guarantees from actors outside the region, akin to the formal security guarantees that US allies in East Asia enjoy in relation to potential aggression on the part of the Democratic People's Republic of Korea.

Even given the remote possibility that the United States would extend a similar security guarantee to the GCC States—given the United States trajectory of disengagement from the region and its pivot to Asia—as well as its preoccupation with the Russian Federation’s invasion of Ukraine, it is likely that the GCC States would not consider US guarantees sufficient as they once did in the past, a feature that has been a major catalyst for their security cooperation with Israel as well as their direct engagement with Iran.⁵⁷ Nonetheless, the expansion of US monitoring and interceptor systems among the GCC States and the expansion of GCC–Israel security cooperation along similar lines have implications for relations with Iran given that they undermine Iran’s ability to target Israel from its territory.

Egypt


Egypt is likely the state of the region with the least current concern with delivery systems considering that it neither appears significantly threatened by them or uses them as part of its deterrence capabilities. This does not mean that Egypt would be willing to be involved in a process exclusively focused on means of delivery, especially if it perceived such a process as undermining its efforts to further progress on the Zone. Egypt considers the Zone process—where it has traditionally played a leading role—to be a major pillar of its foreign and security policy. Accordingly, Egypt considers addressing WMD threats through the Zone its main priority and that adding means of delivery to the process as an additional category, equal to nuclear, chemical and biological weapons could detract from progress on that priority.

Egypt could be willing to become involved in a process addressing means of delivery in concert with its GCC allies that find this threat more immediate if the latter would insist on including it as part of Zone negotiations, or as a stand-alone or parallel process in order to extract concessions from Iran or Israel. Though the mutual threat posed by Israel and Egypt is minimal since the Egyptian–Israeli peace treaty of 1979, both states are at an impasse on WMD and regularly negotiate and confer on other issues such as Eastern Mediterranean security and energy. Accordingly, means of delivery could be an area that simultaneously improves Egypt’s negotiating position on other issues and strengthens Egypt’s leadership role in Arab–Israeli issues.

Summary

Means of delivery are an integral part of the region’s security landscape. While states feel threatened by them, and some have made public statements regarding their destabilizing role, the author is unaware of any state that has called for arrangements or agreements for regional controls nor have there been so far significant deliberations on means of delivery within the Zone discussions. Nonetheless, it is not difficult to envision what positions states would adopt in regard to a process focused on means of delivery given their threat perceptions, or what priorities they would assign to the various aspects of such a process.

57 Michael R. Gordon and David S. Cloud, “U.S. held secret meeting with Israeli, Arab military chiefs to counter Iran air threat,” *The Wall Street Journal*, 26 June 2022, <https://www.wsj.com/articles/u-s-held-secret-meeting-with-israeli-arab-military-chiefs-to-counter-iran-air-threat-11656235802>, and Arie Egozi, “Israel announces regional air defense network with Middle East partners, US,” *Breaking Defense*, 20 June 2022, <https://breakingdefense.com/2022/06/israel-announces-regional-air-defense-network-with-middle-east-partners-us/>.



S-200 surface-to-air missile in Iran, UPI/Ali Shayegan/Fars News Agency, Iran, 2009.

3

POSSIBLE MEASURES TO ADDRESS MEANS OF DELIVERY

There has been significant thinking within civil society organizations and the arms control community about how to address the threats posed by means of delivery and the possible measures to regulate their use. Some of this thinking has been informed by other treaties or confidence-building measures (CBMs) that sought to defuse tensions during past confrontations, such as between the United States and Soviet Union during the Cold War as well as between Pakistan and India during the 2000s, while other thinking seeks to address more regionally-specific concerns. Proposed measures to address delivery systems can be roughly categorized as follows: 1) declarations and commitments; 2) information-exchange and improved communication; 3) qualitative and quantitative restrictions; 4) operational restrictions; and 5) elimination of entire categories of systems.⁵⁸

There have been a considerable number of options put forward by the arms control community that fall into the above categories for states to consider in the context of the Zone or independently of it. This section outlines some of the potential areas for reducing the threat posed by delivery systems, should states be interested in addressing the topic.

Declarations and commitments, and exchange of information and improved communication

Among all the proposed measures, declarations and commitments, and information-exchange and improved communication are perhaps the least difficult and problematic for states given their voluntary nature. This is assuming that states would have already agreed on definitional issues and which kinds of systems will be included under the adopted measures. In terms of declarations

⁵⁸ The main difference for these categorizations is that CBMs (1–2) do not imply any specific legal obligations while the others (3–5) do imply obligations regardless of whether they are unilateral or part of a formal agreement.



and commitments, practical measures could include the adoption of declarations restraining further procurement, such as ballistic and cruise missiles or space-launch vehicles. More significant measures could include declarations of no-first-use of delivery systems, declarations not to transfer them to non-state actors, or annual declarations of delivery system stockpiles.⁵⁹ No-first-use declarations are considered more difficult to adhere to because states can always claim that their use of delivery systems were retaliatory and/or defensive in regard to the action of other states. Declarations not to transfer delivery systems to non-state actors can be refuted, bypassed, or rendered superfluous by production on the part of such actors. Lastly, annual declarations of stockpiles run counter to the tradition of ambiguity and opacity regarding state capabilities, especially on the part of Israel and Iran. Another practical and voluntary commitment would be to reduce public demonstrations and displays of delivery systems, but this might run counter to the military culture and symbolic messaging of some states in the current security context.

Exchange of information and improved communication

In terms of information-exchange and improved communication, measures could include pre-notification for civilian space-launches or pre-notification for missile tests and training exercises, which may be achievable through third parties. Improving communication within or between states can also serve to avoid miscalculation and escalations stemming from misinterpretation or unfounded threat perceptions. Such measures could serve to defuse tensions but also build capacity in the region to address future restrictions and limitations, as they could prompt the formation of dedicated institutions and, in general, be an exercise in verification processes in preparation for future agreed limits.

⁵⁹ Kubbig, "Coping with military asymmetries in the Middle East," 236–239.

Restrictions and Eliminations

Although the remaining measures can also build confidence, they are significantly more tangible in terms of their outcomes, would entail the adoption of specific legal obligations, and would require verification as well as a certain amount of trust among parties.

Qualitative and quantitative restrictions, such as those that limit specific categories of ballistic missiles—for example those having a range of more than 2,000 km (that being the self-imposed limit of Iran)—could have little bearing on the national security of states of the region because any intra-regional confrontation would include states within this range.⁶⁰ While the utility of such a proposal would not have direct impacts on the regional situation, it could have significant knock-on effects. For instance, it could serve to create positive regional dynamics by breaking taboos and easing tensions⁶¹ and also to build capacity of states to undergo further arms-control processes. Given the minimal impacts of such a measure, this could in theory be a good starting point for efforts to address delivery systems. Proposed limitations on the number of delivery systems to the minimal deterrence level would be a unilateral undertaking by states to reconsider their stockpiles and could lead to a reduction in the number of deployed delivery systems but is a complex undertaking for states to define.⁶²

As for **eliminating entire categories of delivery systems**, the elimination of obsolete delivery systems has been proposed as one potentially acceptable option.⁶³ More ambitious measures could include agreements that limit the payload size to 500 kg and/or payload type altogether (e.g., no WMD), which would have a more direct impact on regional security but also have similar impacts on the broader picture of breaking taboos and building capacity.

On the side of **operational restrictions**, measures could include de-targeting and de-alerting missiles, redeployment or non-deployment and a moratorium on missile testing.⁶⁴ These proposals are ambitious because of their direct impact on deterrence systems and the military balance and could only come at a later stage when considerable levels of trust have been established.

Other considerations regarding proposed measures on delivery systems address the sequence, phasing and pace of any controls. The case for an ad hoc interim missile regime has been made as a gradual and phased solution to concerns that more immediate and drastic measures are unlikely to succeed.⁶⁵ The main argument of such proposals is that any limitation, reduction or elimination of delivery systems would start with declarations of existing inventories as an interim step. While such an approach has its merits and had demonstrated success in the context of the Cold War, it is unclear how and whether it would contribute positively to the regional security environment, and indeed it might further heighten tensions if revealing capabilities would worsen threat perceptions. As for the mechanism to pursue such discussions, the greatest chances to initiate a discussion on CBMs would be through track 1.5 dialogue, where states can meet behind closed doors and away from public

⁶⁰ Elleman, "Banning long-range missiles in the Middle East."

⁶¹ Ibid.

⁶² Delory, "The dynamics of missile proliferation in the Middle East and North Africa," 203.

⁶³ Kent L. Biringer, "Options for transport irreversible dismantlement of obsolete missiles," Sandia National Laboratories (September 2012), <https://www.osti.gov/biblio/1116419>; and Mansoor Ahmad and Abhijit Lyer Mitra, "The Colombo confidence building process: New missile CBMs for South Asia," South Asian Voices, 11 December 2013, <https://southasianvoices.org/the-colombo-confidence-building-process-new-missile-cbms-for-south-asia/>.

⁶⁴ For a study on various verification arrangements that could be applied to missiles, see Pavel Podvig, Exploring Options for Missile Verification (Geneva: UNIDIR, 2022), <https://unidir.org/publication/exploring-options-missile-verification>; and Kubbig, "Coping with military asymmetries in the Middle East," 239.

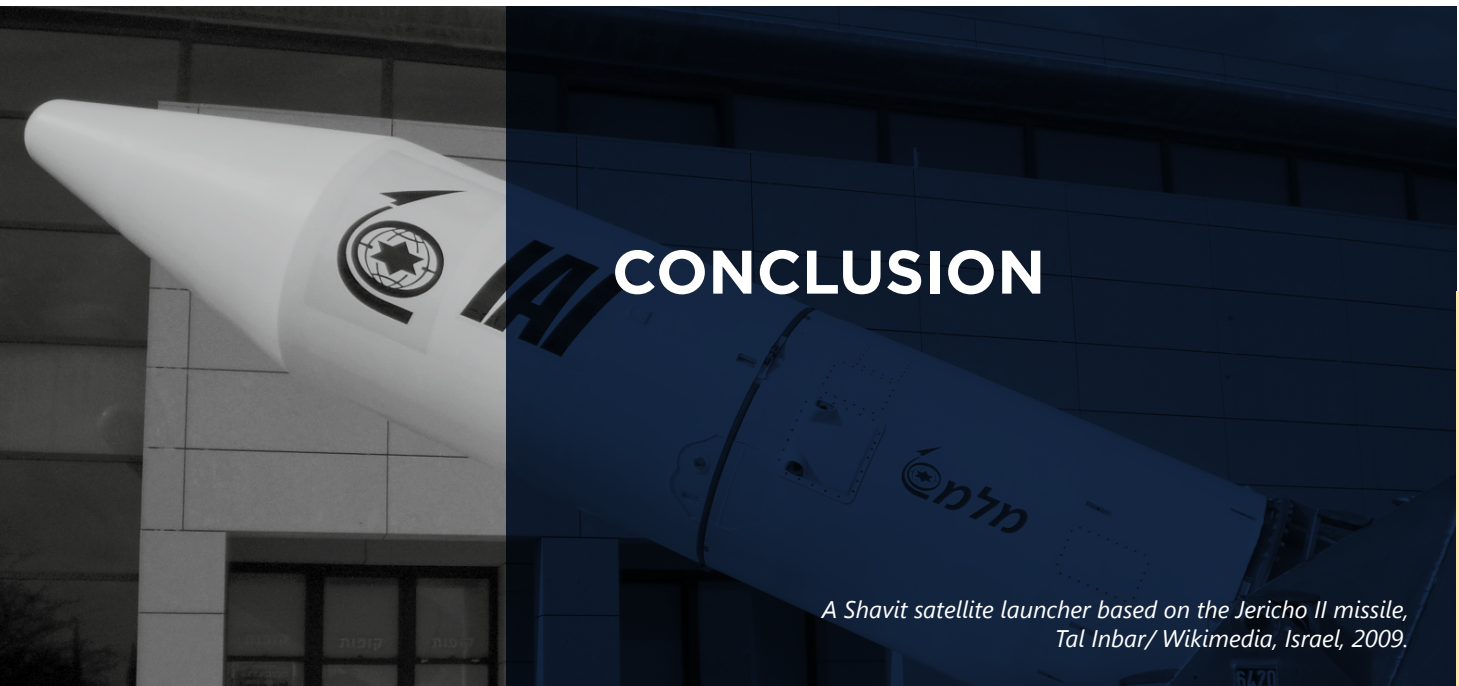
⁶⁵ Delory, "The dynamics of missile proliferation in the Middle East and North Africa," 203.

pressures, formal diplomacy and public posturing. Another option would be to promote the adoption of existing international instruments, such as HCoC, even though they exclude certain classes of delivery systems of concern to some states of the region (such as attack aircraft). Given that none of the existing delivery systems in the region, with the exception of Israel's Jericho missiles, seem to exclusively serve the purpose of WMD delivery, parallel 'mini-lateral' or subregional efforts could be pursued to address conventional/dual-use systems. This would not be to bypass the Zone process but rather contribute to its future prospects. Another measure to be considered could address the vicious cycle of investment in offensive–defensive systems and its contribution to the regional arms race and insecurity.

There are no shortages of creative proposals set forth by the arms control community to address means of delivery (consult the table below for a summary of possible CBMs). States of the region have thus far been reluctant to consider them in the context of the Zone or independent of it. Should regional states decide to confront this issue, some or many of these options could be explored by states to help reduce tensions and to build trust. It is certainly a worthwhile endeavour for civil society to continue exploring the viability of such proposals, and for states to be involved directly or indirectly, in order to inform such processes or to validate, reject or endorse any given option.

Possible CBMs Related to Means of Delivery

Possible CBMs	Components
Declarations and commitments	<ul style="list-style-type: none"> • Declarations restraining further procurement, such as ballistic missiles or space-launch vehicles • No-first-use of delivery systems • Declarations not to transfer delivery systems to non-state actors • Annual declarations of delivery system stockpiles
Information-exchange and improved communication	<ul style="list-style-type: none"> • Pre-notification of launches for non-military purposes • Pre-notification of missile tests and training exercise
Qualitative and quantitative restrictions	<ul style="list-style-type: none"> • Limit specific categories of ballistic missiles, such as those with a range above 2,000 km • Limitations on the number of delivery systems to a minimal deterrence level
Operational restrictions	<ul style="list-style-type: none"> • De-targeting and de-alerting missiles, and redeployment or non-deployment • Moratorium on missile testing
Elimination of entire categories	<ul style="list-style-type: none"> • Elimination of obsolete delivery systems • Limit payloads to 500 kg and/or prohibit payload types altogether (e.g., WMD)



CONCLUSION

A Shavit satellite launcher based on the Jericho II missile, Tal Inbar/Wikimedia, Israel, 2009.

The Middle East is the only region that is actively exploring a WMD-free zone.⁶⁶ It is also the only region where delivery systems are considered as a potential part of the future WMD - or nuclear nuclear-free zone. Controls on delivery systems are perhaps the least explored and formalized aspect, globally as well as regionally, of any arms control process. This paper has highlighted that—despite efforts to address delivery systems in international resolutions and regional initiatives, as well as their inclusion at times in negotiations on the scope of the Zone—the issue has not been explored in depth thus far by states of the region. This paper has also argued that the rapidly changing arms-related situation and other regional developments may further complicate addressing means of delivery but may also lead to a watershed moment when there is a push to address the issue more concertedly given growing concerns with conventional systems.

The proliferation of delivery systems in the region stems from multifaceted threat perceptions and is linked with intractable security dilemmas and conflicts.⁶⁷ Security imbalances and heightened threat perceptions have only fuelled the spread of these systems, a trend that will likely continue. States will need to be convinced that the adoption of controls on delivery systems contributes to their national security and does not undermine it. Most states have not yet arrived at that point. While states of the region have not publicly stated positions on delivery systems, their positions vis-à-vis any controls can at times be inferred and this paper has tried to do so with what limited public information is available. When and if states do seek to achieve some progress on this issue, they will have plenty of options set forth by the arms control community to consider, which have also been highlighted in this paper. Ultimately, it will be left to states to consider the viability of these options. Nonetheless, their direct or indirect involvement in discussions of the arms control community could offer guidance on the parameters and viability of any such explorations.

⁶⁶ There are currently five nuclear-weapon-free zones. The Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco); South Pacific Nuclear Free Zone Treaty (Treaty of Rarotonga); The Treaty on the Southeast Asia Nuclear Weapon-Free Zone (Treaty of Bangkok); The African Nuclear-Weapon-Free Zone Treaty (Treaty of Pelindaba), and the Treaty on a Nuclear-Weapon-Free Zone in Central Asia.

⁶⁷ Pieter D. Wezeman, "Conventional strategic military capabilities in the Middle East," in *WMD Arms Control in the Middle East: Prospects, Obstacles and Options*, eds. Harald Müller and Danial Müller (Surrey: Ashgate Publishing Company, 2015), 187; and Delory, "The dynamics of missile proliferation in the Middle East and North Africa," 194.



MEANS OF DELIVERY:

A COMPLEX AND EVOLVING ISSUE IN THE MIDDLE EAST WMD-FREE ZONE INITIATIVE

Means of delivery of weapons of mass destruction are inextricably tied to the initiative for Middle East zone free of WMD. Means of delivery-related threats are evolving, increasing in complexity, and leading to new security dynamics in the region, yet they remain the least explored part of the initiative. In this publication, the author examines the history of means of delivery in the context of the Zone, captures and assesses what regional perspectives and concerns are known regarding their inclusion in the Zone, and presents options for states to consider if and when deliberating this issue.