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# THE APPROACHING MIDDLE EAST ARMAGEDDON AND THE VULNERABILITIES OF ANTI-BALLISTIC MISSILE SYSTEMS[*1]

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CONCLUSIONS (extracts)

....Finally, the rapprochement between Greece and Turkey would greatly help to encounter the impact of the forthcoming Armageddon and especially the waves of refugees that will be directed towards Turkey, Greece and other countries of southern Europe. There exists a plethora of channels between Greece and Turkey, especially between the academic communities of the two countries, that can help in designing a roadmap for such a rapprochement.

To cut short our conclusions, our opinion is that the safest and most effective way for Israel to tackle the Iranian threat (avoiding in this way the introduction of the rules of Russian Roulette to its citizens) is to be in close consultations for this issue with the U.S. administration, turning a very careful ear to the anxieties, concerns and advices of the western powers. On the other we fully understand the critical security concerns of Israel that take an existential character in the light of the recent dramatic historical events from holocaust onwards. On the other hand, the decision to walk practically alone in the dangerous and unpredictable 'moving sands' of the Middle East is extremely risky.

## 1. INTRODUCTION

Karkazis (2007) presented the GIS "Ptolemeos Ballistic" which simulates trajectories of ballistic missiles and related critical defense parameters and aspects such as the nuclear blast windows. Karkazis (2009c) presented the GIS "Ptolemeos-Orbital" which simulates the trajectory of ballistic missiles with emphasis on satellite carriers offering a detailed analysis and presentation of trajectory parameters (impact of atmospheric conditions, forces, velocities, accelerations, altitudes etc). The numerical analysis regarding Shahab-5 is based on a revised version of the above GIS.

### 1.1 The missile and nuclear factors in the Middle East security balance equation

Karkazis (2005) presented an appraisal of Iran's technical capacity and potential as an aspirant to nuclear power in Eastern Mediterranean and Mesopotamia region, and of Israel's capacity to withstand successfully nuclear ballistic missiles attacks. In particular, findings from a simulation-based analysis of the hit performance of Shahab-3 and Shahab-4 class of Iran's ballistic missiles is presented. The analysis focuses on critical parameters, such as meteorological conditions and computational capabilities, governing the performance of the above types of missiles. On the other hand preliminary findings, regarding critical aspects in the performance of Israel's defense systems (ballistic missile interceptors) are briefly presented and discussed. The author's main conclusions are given below.

Although high levels of accuracy are not required in the case of nuclear hits against large urban sites where the nuclear blast impact can extend to several kilometers, there exist specific cases or offensive ballistic strategies where the above accuracy or the even higher one reported by western intelligence sources (max error radius equal to 170 m) plays a significant role. Such may be:

- The case of "highly protected" ground strategic targets, such as interception or ballistic missile launcher or control command sites etc. or air strategic targets such as air-born radar and control command systems.
- The case of "synchronized" multiple ballistic missiles attack scenarios exploiting nuclear blast impact capabilities.

Previous analysis indicates that the crucial factor in the interception phase, which last only a few seconds and takes place in zones where drag forces are extremely intense, are:

- The error-controlling computational capabilities of the computer-based control command systems and
- The capability to adequately protect the above systems against nuclear blasts and their electromagnetic pulse impact.

Karkazis and Isen (2007) provided a brief review of the present security situation in the Middle East regarding the threat imposed on Israel and on the West in general by the Iran's ballistic missiles and nuclear technologies advancements. The recent technological advances of Iran in the area of ballistic missiles is an issue of serious concern in the West, mainly in Israel and the U.S. The authors, next, introduced certain critical defense analysis notions regarding the employment of Arrow class interceptors against Shahab-3 and Shahab-4 ballistic missiles and they apply them on a series of cases including Istanbul, Ankara and Gaziantep in Turkey and Haifa in Israel. Finally, the authors introduced a series of "synchronized" multiple ballistic missiles attack scenarios exploiting nuclear blast impact capabilities. The authors' main conclusions are given below.

Arrow class interceptors exhibit an efficient performance against Shahab – 3 type of ballistic missiles for geodetic distances up to 1000-1200 km between ballistic missile launcher and the target. On the other hand, it is doubtful if Arrow class interceptors can perform satisfactorily against Shahab – 4 type of ballistic missiles. As far as the concept of nuclear blast windows are concerned, although numerical experience is very limited to draw safe conclusions, if the attacking power could develop technological capabilities which will ensure appropriate accuracies for synchronized ballistic missile deliveries then the structure and the strategies of the present defense systems should change dramatically adjusting to a game theory logic of highly complex combinatorial geometric concepts depicting the comparative geo-strategic significance of the territorial space of the attacking and defensive powers.

Karkazis and Isen (2008) in the first part of their paper discussed the missile and nuclear factors in the Middle East security balance equation and the associated strategic dilemmas of the key players (Iran, Israel and U.S.). Then they shifted their attention to the ideological background of the present conflicts and tensions and to the challenges imposed on the West by the emerging, ideological and military, power of Iran. The above risk assessment- type of diagnostic analysis ultimately aims at throwing more light in the

ideological, diplomatic and political environment in which critical decisions, regarding the above mentioned strategic dilemmas, will be taken.

Karkazis (2009a) pointed out that the Middle East is at a critical cross-roads. The achievement of an effective and viable security arrangement in it appears to be a problem far more difficult than its predecessor, the «Eastern Question» problem. This is due to several reasons the most important of which are :

- The conflicting diversity and complexity of the (endogenous) local socio-economic and ideological orders which emerged from the collapse of the more-or-less homogeneous Ottoman Order.
- The intensifying and conflicting geo-political interests of the (exogenous) strategic players in the Region which exhibit a strong spatial differentiation mainly between the western part of the Region (the Balkans) and the eastern part of it (the Middle East).
- The intensifying conflict between Iran and Israel, the emerging conflict between Israel and Turkey (still at the level of verbalistic skirmishes between the two countries aiming at reducing or neutrilizing muslim reactions against Turkey in the case of an involvement of it in the Iran-Israel conflict) and the ensuing conflict between Greece and Turkey regarding Cyprus and the Aegean archipelagos issues.

The above conflicts act as seismic frictions of tectonic plates transferring geo-political tensions and tremors from the western to the eastern part of the Region and vice-versa.

### 1.2 Iran's ballistic missiles and satellite program

Karkazis and Vidakis (2009) presented an overview of Iran’s Ballistic Missile Program. Their article provided a brief description of what is publicly discussed regarding Iran’s ballistic missile programs: short, medium and long-range. Currently, there is little disagreement among most experts on the grounds that Tehran has acquired a number of ballistic missiles from other countries and has developed other ballistic missiles, either indigenously or in cooperation with certain countries. Iranian ballistic missile proliferation has born an international concern, including United States and European countries. The authors in their conclusions point out the following. The spread of arms of mass destruction and ballistic and cruise missiles constitutes a direct threat for the international safety. Thus, the distribution of ballistic systems and respectively the threat is swift. In 1972 only nine countries possessed ballistic systems, while in 1990 (after the end of Cold War) there were sixteen countries that possessed ballistic systems with a

variety of ranges. Up to the end of 2006, this number was increased to twenty five. Prior to 1991 and the first Gulf War, the main threat to Iran was Saddam Hussein's Iraq. Since 1991, the United States have replaced Iraq as threat number one for Iran. The Iranians are pursuing the most intensive missile program in the Third World, with constantly increasing ranges[1]. The U.S. Intelligence Community believes Iran could have a nuclear weapon sometime in the beginning to the middle of the next decade[2]. Iran already possesses the largest inventory of ballistic missiles in the Middle East with Tehran viewing its ballistic missiles as an integral part of its strategy to deter - and if necessary retaliate against - forces in the region, US included.[3]

Karkazis (2009b) presented a brief review of Iranian ballistic missiles and satellites advancements and capabilities focusing on the development of satellite missile vehicles. A comparative simulation-based analysis of ballistic missile 'Safir-2' trajectory and of satellite 'Omid' orbital characteristics was performed and the results were cross-examined against the latest scenarios regarding the possibility of Israeli military action against Iran. The analysis was based on GIS "Ptolemeos Orbital".

### 1.3 Scenarios regarding the possibility of Israeli military actions against Iran

The option of military action by Israelis against Iran is well projected and discussed in the international media, fora and military think tanks and it is extensively analysed in the relevant literature. Karkazis, Vidakis and Baltos (2010) analysed a series of scenarios regarding a possible Israeli air attack against nuclear facilities of Iran. Their paper constitutes the summary of a wider study, aiming at the examination of a hypothetical Israeli operation to pre-emptively destroy the nuclear installations of Iran, as well as the development of feasible scenarios based on the fact that such an objective is achievable on the side of Tel-Aviv. The main cause for authors decision to make such an analysis is the existence of concrete facts and elements towards the application of a theory model which describes and determines the imminence of a relevant military operation. Initially, certain elements are reported with respect to Middle East area, Iran and its nuclear

[1] Iran has been building a fleet of long-range missiles ideally suited to carrying nuclear warheads.
[2] See U.S. House of Representatives, Permanent Select Committee on Intelligence, Recognizing Iran as a Strategic Threat: An Intelligence Challenge for the United States Staff Report of the House Permanent Select Committee on Intelligence Subcommittee on Intelligence Policy August 23, 2006.
[3] See Annual Threat Assessment of the Director of National Intelligence for the Senate Select Committee on Intelligence, February 2, 2006 by John D. Negroponte, (Director of National Intelligence of USA).

program. In addition, a simple model of successive stages is examined for the implementation of a preventive attack, targeting Iranian installations[4], including the air-force strike scenarios.

According to the authors the air attack scenarios are distinguished into two groups:
- Land over-fly shortest path scenarios in which Israeli air attack route will be confined to a zone determined from the north by the Syrian and Iraqi borders with Turkey and from the south by the Jordan and Iraqi borders with Saudi Arabia.
- Sea over-fly longest path scenarios in which Israeli air attack route will circumvent Arabia peninsula over-flying the Gulf of Oman and the Strait of Hormuz before entering Iranian airspace.

The latter scenarios are characterized by the element of surprise but at the same time require a much longer time window for their successful completion, especially for their re-fuelling phase which is expected to take place over the Gulf of Oman (in the western part of the Arabian Sea) and to last approximately for one hour. On the other hand, in view of the fact that Iranian satellite 'Omid' over-flies the Arabian Sea near the area of a possible re-fuelling for the Israeli attack planes and that 'remote sensing' is high in the agenda of ISA for its satellite program, there exists plenty of evidence that the speed up of the Iranian satellite development program is primarily aiming at enhancing early warning capabilities of Iran against the possibility of an Israeli air attack. On the other hand, 'Omid' satellite's orbit time is 91 minutes. If this is considered against the fact that the re-fuelling process of the sea over-flying scenarios will last approximately 60 minutes then it is evident that Iranian satellite(s) will have high possibilities to track re- fuelling activities and traffic over the Gulf of Oman.

Karkazis and Vidakis (2012) analyzed Israel's strategic options regarding Iran. Their conclusions are:

A. Preparatory stage

Before any major conflict in the area, including Britain as an 'open' or 'undercover' opponent to it, Israel is expected:

[4] The present analysis has no other intention but to highlight the need for peace in the relevant area through the description of the threats that may be caused by a further escalation of violence in Middle East. According to a study published by *the Center for Strategic and International Studies*, a military exchange between Iran and Israel could result in the death of as many as 6 million people (http://www.presstv.com/classic/detail.aspx?id=107317&sectionid=351020104).

1. To ‘neutralize’ Libya
2. To secure Greece as an ally
3. To develop a geo-political understanding with Russia
4. To ensure a tri-pole substitute of Turkey (Greece-Armenia/Georgia-Kurdistan)

B. Conflict stage

In the conflict stage Israel is expected:

1. To employ a **holistic** hit strategy against Iran. By only bombing Iran or deploying only ground forces in Iran (Peshmerga, Iranian rebels etc) no sustainable solution to the problem can be achieved. Furthermore, air-attacks with conventional weapons alone cannot be effective (especially in the light of the not negligible possibility Iran already to possess some nuclear weapons). A combination of first hitting with non-conventional ballistic missiles and then employing conventional air forces seems to be the most suitable
2. To ‘neutralize’ Egypt
3. To control the Syrian Gates

## 2. THE STRATEGIC GEOPOLITICAL AND SECURITY PARAMETERS OF ISRAELI-IRANIAN NUCLEAR MISSILES CONFRONTATION

### 2.1 The strategic parameters of the Israeli-Iranian nuclear confrontation

The strategic parameters of the Israeli-Iranian nuclear missiles confrontation are:

a. The part of the Iranian ballistic missiles launch preparation time exposed to Israeli or/and American satellite detection.

b. The time needed by Israeli ballistic (Jericho class) and cruise (Popeye class or other) missiles to hit Iranian targets and their associated accuracy.

c The locational, routing and detection risk aspects of the Dolphin class Israeli submarines capable of launching cruise missiles (carrying nuclear warheads) against Iranian targets.

d. The highly stochastic elements associated with the technological progress on the part of Israelis: (d1) if they succeeded, and to what degree, to develop submarine launched cruise missiles achieving medium supersonic speeds (highly unprobable), (d2) if they succeeded, and to what degree, to develop a Jericho class ballistic missiles version with a hit accuracy comparable to that of cruise missiles (highly unprobable).

e. The “hit” tactics employed by the Iranians: (e1) multiple simultaneous missile launchings, (e2) synchronized missile launchings for the purpose of creating “nuclear blast windows” over Israel to penetrate the “arrow missiles shield”.
d. The “exposed” decisiveness of Israeli and Iranian decision makers to turn a “green” light to nuclear attacks.

On the other hand the Iranians are expected to disseminate information (probably in the form of photos of highly protected underground missile depots) not so much for the purpose of exhibiting the “degree” of their protection but to exhibit their ability to minimize the launching preparation time exposed to satellite detection which is a key strategic variable.

Another critical parameter in Israeli-Iranian nuclear confrontation is the approximate time needed for cruise missiles of high subsonic speed to hit targets in Iran. This time roughly varies as follows:

- From submarines operating in the Persian Gulf: 20 to 60 minutes to hit targets in western and central Iran (Tabriz region lies at the limits).
- From the western part of the Oman Gulf: 30 to 75 minutes to hit targets in western and central Iran.
- From the eastern part of the Oman Gulf: 20 to 60 minutes to hit targets in eastern Iran
d. In the case of an American involvement (highly unprobable) in the game, from western Afghanistan: 10 to 30 minutes to hit targets in eastern Iran.
- The time needed for cruise missiles of medium supersonic speed to hit targets in Iran from the indicated areas is roughly half the above times.
- The time needed for ballistic missiles to hit targets in Iran from Israel is 10-15 minutes.

The risks associated with the deployment of Israeli submarines around Iranian coastline regard mainly the Persian Gulf. Due to its very shallow waters (20-80 meters) the Israeli submarines should operate near the northern part of it (near the Iranian coastline) where the sea depths are much higher. This introduces high risks that could be tackled with the introduction of highly heuristic deployment techniques: for example, to somehow “attach” the submarine to a large vessel (tanker) to minimize the probability of detection.

To achieve a neutralization “on the ground” of Iranian missiles launching attempts,

within “acceptable” probabilistic limits, the Israelis should develop ballistic missiles capable of hitting targets in Iran with an accuracy of less than 100m, a highly improbable prospect (but not completely out of question). Even if Israelis have already succeeded in developing such capabilities still they lack the ability to achieve with their satellites (and other forms of “inspection”) an effective inspection of the enormous Iranian territory. To achieve an acceptable degree of effectiveness they need the help of Americans with the latter most probably putting conditions on this issue with one of them being to have the “upper hand” for the decision to hit Iran.

The emerging new geopolitical trends in the Region will force Israel to rearrange the order and the weights attached to its strategic options regarding Iran, by putting as first and ultimate priority the destabilization of it. Both the departed and the new Israeli prime minister, as highly pragmatic and intelligent leaders, have already understood the above limitations and are pressing hard the Americans to impose effective economic sanctions on Iran as the main tool to achieve, in the medium term, its internal destabilization and finally a regime-change which will guarantee the de-nuclearization of it. On the other hand they both, especially the second, keep up and intensify efforts for the b-plan of attacking Iran either with conventional or nuclear weapons (see next section).

### 2.2 The prospect of a nuclear Iran

A considerable number of western analysts argue that Iran may already possess nuclear warheads. In any case, even if a small (say 10% or less) probability is to be attached to such an event, the issue that matters is the “expected” damage that could be inflicted on the densely populated areas of northern Israel with densities varying between 300 and 500 inhabitants per $km^2$. In such a case (of justifiable uncertainties regarding this strategic issue) the “expected/probabilistic” (within accepted limits) possession of nuclear warheads by Iran, in scenarios building terms, is qualitatively and methodologically equivalent to “possession”. In the above context of thinking, a nuclear balance of powers in the Region has already been achieved at least at the scenarios building level. Towards this end a considerable part of the Anglo-American political and diplomatic establishment worked methodically, somehow covertly and innovatively, under the influence of the powerful and historically tested British geopolitical concepts of “balance-of-powers”. There exist powerful indications that the above strategic geopolitical option dates back to first Obama and Blair administrations.

The risks regarding erroneous or “extreme” decisions by the part of the main decision makers in the Iranian-Israeli geopolitical conflict (associated with key elements - mainly ideological - of their personalities) are very low. Regarding Iran, the decision makers there are very cautious and this “cautiousness” is a historic characteristics of the Persian geopolitical mentality. Regarding Netanyahu, one can argue that his “hawkish” profile as portrayed by many analysts in East and West, is rather misleading. His ideological profile is to a large extend shaped (through his direct personal acquaintance or his indirect through his father) by his ideological mentor, the greatest Hebrew Teacher (and a Man of Peace) of the 20th century, who despite his “hawkish” stance towards the “land-for-peace” strategy he argued in favor of a restrained exhibition of military power by the part of Israel. On the other hand, Benett is a resolute and defiant soldier, politician and patriot and at the same time he is a pragmatist and hard and cynical geopolitical player who established a legacy that would help him to persuade Israelis for the difficult future decisions or compromises that should be made to safeguard their security in the mid and long term.

### 2.3 A crisis risk assessment for the case of Iran focusing on insurrection and regime collapse

Karkazis (2010) performed a crisis risk assessment for the case of Iran. In the first part of the paper the author applied a multi-criteria assessment approach employing the following criteria:

- Social discontent criteria
-News compilation and dissemination
- Social unrest defusing capabilities

In the second part of the paper the author analyzed the issues of social, ethnic and religious cohesion in Iran and in combination with the above assessment he performed an analysis of insurrection and regime collapse risk and their regional crisis impact.

Insurrection and regime collapse risk

The above multi-criteria analysis showed that Iran is characterized by a high risk for social unrest explosion, by a high risk for dissemination of social unrest and also by extremely low capabilities to defuse social unrest or equivalently extremely high risk for social unrest sustainability (if this reaches critical levels). Actually is the only country in

the Region to possess the above characteristics. As a consequence Iran is characterized by a very high risk for encountering insurrection and regime collapse, the highest among the 14 comparative countries.

Regional crisis impact

In the case of a regional crisis Iran will face, beyond the consequences of a possible Israeli missile or air attack, critical political and military threats and pressures which in synergy with

(a) the dangerously increasing social discontent of large parts of its population (particularly of the young people on whom the defense of the regime against a foreign aggressor will primarily rely upon) related to the highly corrupt and intensely dogmatic and repressive regime of the country and
(b) the aspirations and the strong secessionist movements in Iranian Kurdistan in the western part of the country and in Beluchistan in the eastern part of it

will produce an explosive mixture the handling of which by the Iranian regime will be an extremely difficult and complex problem. More specifically, in the western front Iran will face the following four military threats:

1. The main part of the Peshmerga forces which are expected to enter Iranian Kurdistan (and even further to the north and south of it) initiating commando type war operations and organizing the resistance of local Kurds. The reports that the Peshmerga forces may be as strong as 370.000 soldiers (CB News) will allow for large scale military operations inside Iran.
2. The forces of the People's Mojahedin Organization of Iran (PMOI) which may be as strong as 10.000 fighters according to the Council of Foreign Relations (USA) and specifically the ready for war PMOI force of 3400 fighters kept under protection in the Camp Ashraf (Iraq) 100 km west of the central part of the borders of Iran with Iraq. There exists mounting evidence that this force has already made preparations for such a mission: (a) the location of Camp Ashraf is relatively near to the Iranian borders, (b) protection is offered to the fighters of the Camp, (c) the fact that the PMOI fighters of the Camp have been allowed to keep their weapons and to enjoy some kind of self-government. These forces are expected to intrude into the western central regions of Iran

(eg. Kermanshah) initiating a guerrilla type of war, organizing the resistance of local populations and undertaking massive operations deep inside Iran to disrupt communication and transportation networks and to engage in a psychological war against the regime.

3. The fiercely anti-Iranian forces of “Al-Qaeda of Iraq” which amount to 1.000 core members and 10.000 fighters and possibly some other militant groups cooperating with it such as the 1920 Revolutionary Brigade. These forces are expected to engage primarily in massive terrorist activities against Iraqi Shia in order to neutralize their reactions emanating from an invasion of Iran and secondary in terrorist guerrilla type activities in the western central parts of Iran (near the borders with Iraq) aiming at the disruption of communication and transportation networks. Al-Qaeda of Iraq has already been involved in this kind of operations inside Iraq.

4. The Iranian militant resistance group Jundallah, closely associated with alQaeda, which operates in Baluchistan, eastern Iran and has a force of 1.000 fighters. This group is expected to act in cooperation with al-Qaeda and the Iranian resistance groups in the western Iran and undertake guerrilla type attacks aiming at the disruption of communication and transportation networks connecting Baluchistan with central Iran and also at a psychological war against the Iranian regime (killings of Iranian soldiers and regime sympathizers). Note that the group has already killed 400 Iranian soldiers and it was involved in a major operation in 2006 in which its fighters blocked the Zabol-Zahedan road in eastern Baluchistan and killed 22 civilians. Note that the Zabol-Zahedan road is the main road axis connecting eastern Beluchistan and central Iran and its capital. The above activities are compatible with the scenarios (secession of Baluchistan from Iran) introduced by Colonel Ralph Peters in the Armed Forces Journal (June 2006) and depicted in his famous map.

Besides the above military threats the Iranian regime will face a political threat from the National Council of Resistance of Iran, stationed temporarily in Paris, which is supported by USA and other western powers and which prepares itself for a future leading political role in Iran. This scenario is compatible with the decision of USA, UK and EU, in 2009, to remove PMOI (its military wing) from the list of terrorist organizations possibly to allow for greater diplomatic and military maneuvering by the part of National Council. Also the presumed hiding of Massoud Rajavi, president of the Council, who has not made any public appearances since 2003 invasion of Iraq, is compatible with this scenario that

is to safeguard a leading role for him in Iranian politics if the regime of Iran is overthrown.

### 2.4 Israel's risky wanderings in the nuclear minefields and the dangerous revival of religious fundamentalism

Israel's decision to develop advanced nuclear technology and produce nuclear weapons (officially not admitted for obvious reasons) was highly dangerous since it introduced the rules and risks of 'Russian Roulette' on the people of Israel. It is profoundly obvious that the development of nuclear weapons by Israel would force other Muslim or Arab states (sooner or later and in the context of their fierce ideological, political and military conflict with Israel) to start working towards this direction. The shah of Persia was the first to react to Israel's provocative action and started to spend enormous amounts of money in order to build the necessary infrastructure with the help of France and West Germany. Israelis and Americans reacted swiftly by 'spreading the carpet' to ayatollahs who toppled Shah's megalomaniac regime and postponed for a while the nuclearization of Iran. After a few years Iran entered again the nuclear race with even greater zeal and with covert help from abroad. If Israel is forced to use nuclear weapons against Muslims or Arabs[1] then the latter will enter 'en mass' and with far greater zeal in the nuclear race and at the end and rather soon will be successful. At such a moment the fortunes of Israel will have been sealed. Throwing a nuclear bomb in the vast and thinly populated Arab or Muslim territories is practically nothing compared to the impact of a nuclear bomb thrown to northern Israel, an area of approximately the size of Cyprus, which accommodates more than 5 millions of Israelis and more than 80% of the economic production of the country. The issue of nuclearization of Israel is automatically related to the search for alternative long-term security arrangements. The historic paradigm of the Greek colonialists of the Hellenistic era, who built methodically cultural ties and created deep roots in the Region favoring their integration with local populations, could be possibly one such alternative.

After all, the Greeks employing this strategy managed to retain their control in the area for several centuries. On the contrary, taking a consensual divorce with the Palestinians and building walls within each other is counterproductive in the long term. The second most serious long-term security problem of Israel is the re-emerging religious fundamentalism. Finally one could underline a weakness in the communication's weaponry of Israel, namely the over-reliance and over-use of the easily and quickly

produced cliché of 'anti-semitism' when encountering undesirable political criticism. This tendency weakens, with the time, the individuals' and communication systems' ability to exercise effectively the power of reasoning.

## 3. THE APPROACHING ARMAGEDDON IN THE LIGHT OF THE RECENT GEOPOLITICAL AND SECURITY DEVELOPMENTS

We use this biblical name (Armageddon), popular among journalists and writers, to underline the enormous uncertainties and risks, both for Israel and the rest of the World, associated with of an attack (especially a nuclear one) on Iran. The number and intensity of indications for such a scenario (an attack on Iran) is growing exponentially during the last several months. The events below might have been geared, besides the well publicized causes, also by the highly probable (according to a plethora of worldwide assessments) prospect of an Israeli attack on Iran.

1. The hasty withdrawal of the Americans from Iraq and Afghanistan to avoid (possibly) any kind of direct or indirect involvement in it. It is very probable that the British, in consultation with the Americans, will take certain steps to fill the gap with the help of their allies Turks that were assigned the task of protecting capital's airport. Turkish government, being well aware on the approaching Armageddon (following the advice of MIT and its charismatic director). Note at this point that Dr. Fidan's Ph.D. thesis is titled "The role of information technologies in verifying international agreements" (Karkazis, 2011). The establishment of the Turks in the hot spot of Kabul's international airport would certainly give them an enhanced ability to get an early warning on the forthcoming events. Furthermore the cautious and restrained (lately) Turkish government dealings in the wider region is most probably geared by the prospect of a war in it. Of course this decision of the Turks is not without risks especially in the case of an attack on Iran. In such a case the risks most probably will come from outside.

2. The Pegasus spy scandal (especially the spying of president Macron) that may reveal an excessive anxiety from the part of Israel to decode strategic decision-making that may affect Israel in this critical for it period: for example a British-French geopolitical understanding going beyond open declarations. Note at this point that Anglo-Israeli relations are characterized by certain 'difficulties' which span back to the period of British

Mandate of Palestine. It is interesting at this point to recall the interesting "ambassador Hotovoly affair" that took place four years ago (appendix 1). Recently a growing number of publications critical of the British policies regarding Jews in the British Mandate and Israel afterwards appear in the international press. A representative example is an article of Haaretz titled "WHAT DID THE BRITISH EVER DO FOR ISRAEL? (https://www.haaretz.com/opinion/.premium-what-did-the-british-ever-do-for-israel-1.6171885) with its author reporting that "Many Israelis would summarize Britain's behavior in this period as turning away desperate Holocaust survivors from their promised homeland, and ruthlessly executing Jewish patriots fighting for their right to self-determination". See also
https://www.tandfonline.com/doi/abs/10.1080/02684527.2019.1616389

3. The interestingly relaxed Israeli stance during recent years towards the development by Hamas of an enormous stockpile of (rather primitive) missiles and construction of deep tunnels in Gaza. The recent dramatic confrontation between Hamas and Israeli Defense Forces offered to Israelis a unique opportunity, probably the last one before an attack on Iran, to test at a large scale (resembling a real war) the following critical political and military parameters:

- The critical time for the Israeli public to reach nuclear shelters. The average time (frequently reported) of 7-8 minutes, in the light of our tests on Shahab-5, is not satisfactory.
- The destruction of deep tunnels in Gaza using state-of-the-art bombs as an a-priori testing of similar attacks on Iranian deep tunnels accommodating nuclear facilities. Israelis have already asked Americans to provide them with similar advanced bombs with their response being yet unknown.
- Testing Iron Dome anti-missile system in conditions of saturation (mass missile attacks). The system, according to published reports, exhibited serious vulnerabilities (mainly at the software level). Although Iron Dome is completely autonomous from the Arrow anti-ballistic system, one could draw useful information on saturation attack conditions regarding the latter.

4. The hastily promoted Abraham Accords and their rapid extension towards many directions (from Bahrain to Sudan) is most probably an attempt of Israel to safeguard its backyards in the case of an attack on Iran. Appendix 2 gives details about the surprising rapprochement of Israeli- Sudan relations.

5. Finally the hastily and surprisingly arranged recent summit between Biden and Putin (following the unprecedented Biden's remarks on Putin) most probably tackled also the hot issue of a possible attack on Iran. The American administration (evidently) is well aware of the geopolitical pursuits of Russia in the case of a regime change in Iran which impose a strategic threat for the American interests there (appendix 3).

## 4. THE VULNERABILITIES OF ANTI-BALLISTIC MISSILE DEFENSE SYSTEMS. THE CASE OF SHAHAB-5

### 4.1 Shahab-5 and North Korean MRBMs

The technical characteristics of Shahab-5 and relevant information sources are given in https://fas.org/nuke/guide/iran/missile/index.html (see also picture 1). Shahab-5 (Shahab meaning "Meteor" in Persian) is an Iranian medium-range ballistic missile (MRBM) the development of which took place (estimations characterized by uncertainties) around the end of 1990's. It is probably based on North Korean LRBM Taepodong-2 with a first stage based on the Soviet RD-0216. Potential range of the missile is estimated to be between 4,000 and 4,300 km with a warhead payload of 700 to 1,000 kg (source: Iranian Weapons of Mass Destruction: The Birth of a Regional Nuclear Arms Race?, Anthony H. Cordesman & Adam C. Seitz, ABC-CLIO, 2009, page 123).

In May 15, 2017 Jack Kim Ju-min Park reported in "Aerospace and Defense" (https://www.reuters.com/article/idUSKCN18A12B) that North Korea's successful missile test-launch signals major advances in developing an intercontinental ballistic missile, such as mastery of re-entry technology and better engine performance key to targeting the United States. He also reported that according to North's official KCNA news agency the new strategic ballistic missile named Hwasong-12, fired on Sunday at the highest angle to avoid affecting neighboring countries' security, flew 787 km (489 miles) on a trajectory reaching an altitude of 2,111.5 km (1,312 miles).

According to our assessment it is probable that the almost vertical (both upwards and downwards) trajectory of Hwasong-12 served also a second objective, that of attaining maximum hit velocities and primarily minimum critical reaction time (see next section)

two parameters related to vulnerabilities or limitations of anti-ballistic defenses2 offered by Patriot or Arrow systems.

### 4.2 Numerical experience with Shahab-5 flight simulation tests

The following two attack scenarios were tested:

Scenario 1 producing minimum Flight Time (picture 1) and
Scenario 2 producing minimum Critical Reaction Time (picture 2)

The first attack scenario is aiming at producing maximum casualties among the civilian population whereas the second is aiming at maximum penetration through the anti-ballistic systems shield. Note that the critical reaction time is the missile's flight time between altitudes 50km (approximately the flight ceiling for Patriot/Arrow anti-ballistic systems) and zero km.

Results for Scenario 1: minimum Flight Time

range = 2502 km (this range is approximately equal to the geodetic distance between eastern Balochistan and southern Israel)
maximum altitude = 250 km approximately
flight time = 660 sec (11 minutes)

| | | |
|---|---|---|
| missile altitude (km): | 51 | 1.84 |
| hit angle (deg): | -15.9 | -17.5 |
| horizontal velocity (m/sec): | 5096 | 5138 |
| vertical velocity (m/sec): | -1450 | -1623 |
| flight time (sec): | 627.5 | 660 |

Critical Reaction Time (sec): 32.5

Results for Scenario 2: minimum Critical Reaction Time

range = 2527 km

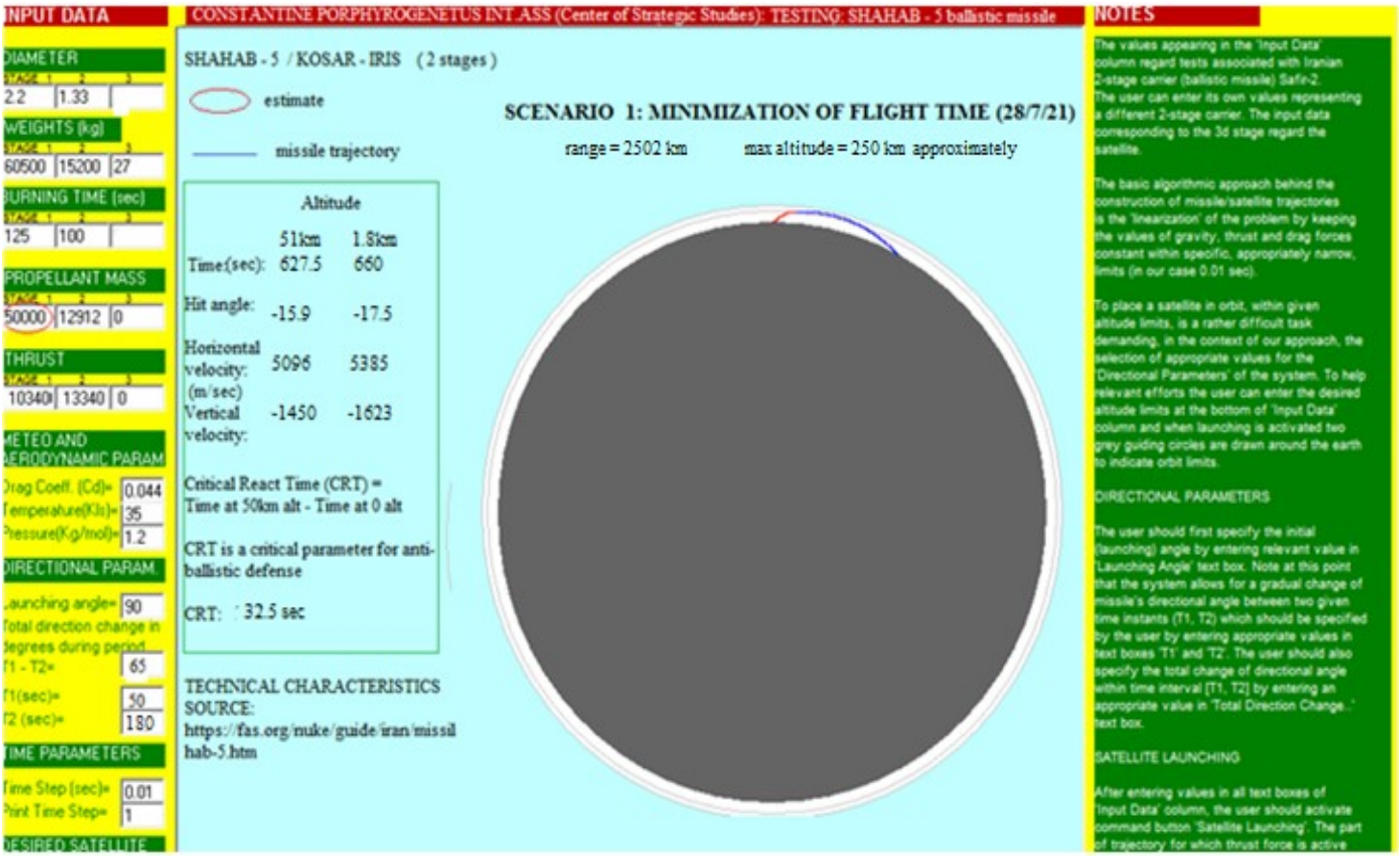
maximum altitude = 1500 km approximately

flight time = 1550 (26 minutes)

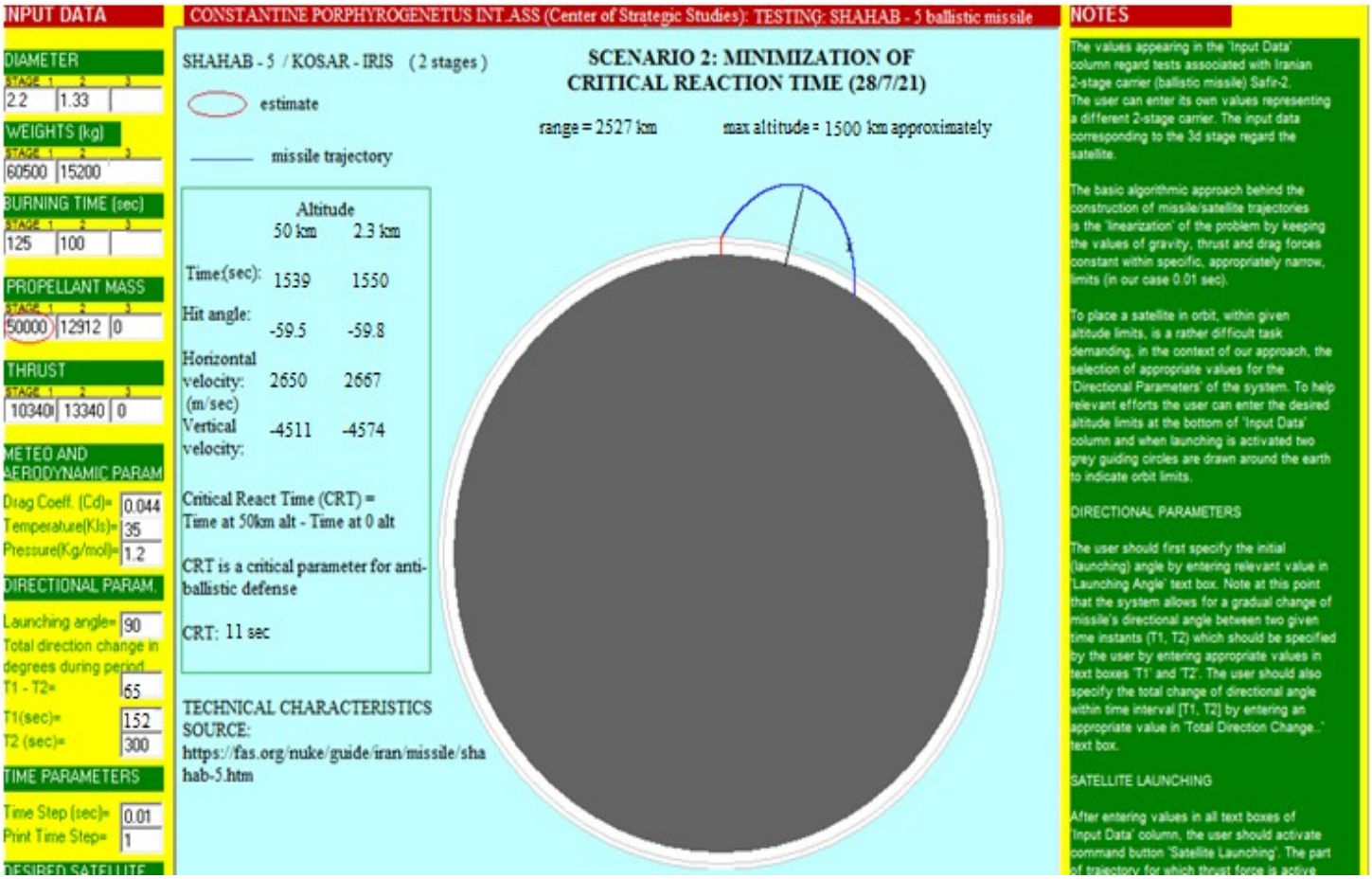
| | | |
|---|---|---|
| missile altitude (km): | 50 | 2.3 |
| hit angle (deg): | -59.5 | -59.8 |
| horizontal velocity (m/sec): | 2650 | 2667 |
| vertical velocity (m/sec): | -4511 | -4574 |
| flight time (sec): | 1539 | 1550 |

Critical Reaction Time (sec): 11

**PICTURE 1. Minimization of Flight Time**



**PICTURE 2. Minimization of Critical Reaction Time**




## 5. CONCLUSIONS

A necessary and important element in the attack scenarios that will be presented below is the creation of excuses being either real or staged. Historically most of war excuses were staged (Thucydides recorded some very interesting ones) decorated with imaginative and convincing elements. The excuse for such an attack is expected to be an event that will sock international public and of course Israeli one. Such an event may act as a 'canary' for the forthcoming attack.

The following four scenarios, regarding an Israeli attack on Iran were assessed:

1. A massive Israeli attack with conventional weapons against Iran with the latter assumed not to possess nuclear weapons
2. A massive Israeli attack with conventional weapons against Iran with the latter assumed to possess nuclear weapons

3. A massive Israeli attack with a mixture of nuclear and conventional weapons against Iran with the latter assumed not to possess nuclear weapons
4. A massive Israeli attack with a mixture of nuclear and conventional weapons against Iran with the latter assumed to possess nuclear weapons

In the first scenario Israel has the upper hand. The massive attack is expected to include air forces, ballistic missiles launched from Israel and cruise missiles launched from submarines. Each one of the above three attack weapons possesses distinct (and necessary for a successful massive attack) features the other two are not possessing. Thus the presence of all them in the attack planning is almost certain. Iran is expected to react

(a) By a massive ballistic missiles attack on Israel,
(b) Ordering Hezbollah to massively attack Israel with ground forces and missiles and
(c) Ordering Hamas to attack Israel with any means available.

As a result of the analysis presented here (section 4.2) Iranian ballistic missiles (Shahab-5) can hit every part of Israel in approximately 11 sec which is dangerously close to the average time (frequently reported) of 7-8 minutes needed by the Israeli public to reach shelters. As a result of this and also of (b) and (c) the expected casualties inflicted on Israeli public are estimated from several hundred up to a few thousands. In this scenario Iran, mainly for psychological purposes and creation of strong international impressions, will massively attack also Dimona. The impact on Iran will be critical (regime extensive destabilization, section 2.3). Israel is expected to rather easily handle international reactions except for certain powers that may have covert policies for exploiting such an event against Israel.

The second scenario will be a surprising one both for Israel and the rest of the world. For the remote possibility Iran possesses nuclear weapons their number would be most certainly sub-critical not allowing Iran to return a second wave of nuclear attacks following the nuclear response of Israel. In this scenario Iran will launch as a response nuclear missiles against Israel directed most probably only to densely populated northern Israel (avoiding Dimona) to inflict maximum casualties and above all a very strong psychological sock on Israeli public. In the light of the very small flight time of 11 sec every extra minute of delay in reaching shelters will be associated with thousands of extra casualties. The impact will be of course far greater in the case of 'synchronized'

nuclear missile attacks creating 'nuclear windows'. The response of Israel will be a massive and highly focused nuclear attack preferably with tactical nuclear weapons to minimize casualties and subsequently international reactions. Israel is expected to have enormous problems in handling international reactions. On the other hand the psychological impact on Israeli public will be critical leading to a dangerous demoralization in the medium and long term. Recall at this point the long, hot and traumatic reactions and discussions (possessing hidden arrogance elements) that followed the 2006 Israel - Lebanon (Hezbollah) war which inflicted 165 losses (121 soldiers and 44 civilians killed) on the part of Israel. If Israeli public considers the above losses as too many then the thousands of losses in the case of a nuclear war will most certainly have a very strong demoralizing impact on it.

The third scenario is expected to have an even worse impact on Israel especially as far as international reactions and demoralization issues are concerned whereas for the fourth scenario the impact for Israel will mainly regard international reactions and mounting and demoralizing criticism inside Israel.

Finally, the rapprochement between Greece and Turkey would greatly help to encounter the impact of the forthcoming Armageddon and especially the waves of refugees that will be directed towards Turkey, Greece and other countries of southern Europe. There exists a plethora of channels between Greece and Turkey, especially between the academic communities of the two countries, that can help in designing a roadmap for such a rapprochement.

To cut to a few words our conclusions, our opinion is that the safest and most effective way for Israel to tackle the Iranian threat (avoiding in this way the introduction of the rules of Russian Roulette to its citizens) is to be in close consultations for this issue with the U.S. administration, turning a very careful ear to the anxieties, concerns and advices of the western powers. On the other we fully understand the critical security concerns of Israel that take an existential character in the light of the recent dramatic historical events from holocaust onwards. On the other hand, the decision to walk practically alone in the dangerous and unpredictable 'moving sands' of the Middle East is extremely risky.

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## APPENDIX 1

### UK-Israel relations (an interesting incident)

An Israeli diplomat of London Embassy, following evidently the instructions of the ambassador, performed four years ago an action that justified our assessments on Israeli pursuits in UK and the hidden reasoning behind Brexit: https://www.theguardian.com/uk-news/video/2017/jan/07/israeli-official-shai-masot-discredituk-mps-undercover-video.

About the ambassador: An orthodox, right wing person following Bennett's path. She has a Ph.D. in Law, as a young student acquired some type of hard military training, youngest minister in country's history, served as Diaspora and Science & Technology minister (as did Bennett), a fierce supporter of Greater Israel, with very good connections in USA, a fierce critic of British Jews Board which is in favor of the two-state solution with extensive contacts and relations with Scottish Jews mainly of the Glasgow branch (many of them being in favor of an independent Scotland). We expect that the highly talented ambassador will be a future Foreign Minister.

Israelis have learned their lessons from the expulsion (in 2014) of their ambassador in London. First, it is very probable that a specialized agency in Tel Aviv, focusing on relevant issues, offers valuable diplomatic advice and second the ambassador is an expert on such issues and is supported by valuable legal advice from outside and within the embassy. The embassy actions against British MPs although marginal nonetheless were carefully planned. It is the absence of open London reactions that raises questions.

## APPENDIX 2

### Sudan - Israel relations

Extracts from the working paper "Economic and political periplus of the Erythraean Sea", to appear in Strategic Reports, late 2021

An issue of special interest here is the possibility the Israelis to ask for the establishment of a listening spot in Sudan (similar to that in Eritrea, overlooking Dahlak islands and the Horn of Africa) following the recent visit of Eli Cohen in Khartoum and his contacts with high ranking officials there. It is interesting that immediately after the full diplomatic recognition comes the visit of the Israeli Intelligence Minister. We estimate that Israelis will certainly raise this issue and "sell" it in the following form. "Allow us to develop it and we will offer you in exchange valuable intelligence regarding Islamist terrorist organizations operating in Africa". There exist two areas of interest in Sudan: the mountains along Sudanese Red Sea coast ranging between 1000 and 1700 meters and the Deriba Caldera high peak of 3000 meters in south-eastern Sudan. From the above two Caldera seems to be the most suitable one for gathering information from central and sub-Sahara Africa accommodating most of Islamic extremist organizations.

## APPENDIX 3

### Geopolitical pursuits of Russia in the case of a regime change in Iran

In this case Russia will move quickly and decisively to establish a sphere of influence in Iran, possibly through a geopolitical understanding with Israel. In the case of a civil war in Iran, the Russian army may intervene militarily in the northern part of the country (considerable Russian army forces have already taken positions across the Iranian borders) and Peshmerga/PMOI forces in the western part of it with the aim to 'clear', under international inspection, Iran from dangerous nuclear installations and of course establish democracy in the country. After all the Russians have a history of interventions in this country and know well the "where-abouts" there, at least in the northern part of it.