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#### Abstract

The strategic partnership between India and Israel is wellestablished and improving with the passage of time. Both countries have joint collaboration in many areas, including the serious facelift of the Indian military courtesy Israeli defence firms. Both are also cooperating in the space programme which would give the Indian military dominance in information warfare. The counterterrorism and intelligence sharing between the two would help India add network-centric and electronic warfare capabilities and learn modern techniques for the contemporary combat environment. This defence partnership is likely to create a strategic imbalance in the region, compelling neighbouring Pakistan (and others) to look for countermeasures.

**Key words:** Network-centric and Electronic Warfare, Strategic Disparity, Deterrence, Surveillance, Israel-India Defence.

### Introduction

The Indo-Israel strategic partnership is more than twenty years old.<sup>1</sup> Both countries during this period have achieved a lot of success and strengthened their economic, diplomatic and strategic ties with joint collaboration in many areas. The defence ties between both are of special significance since they would revamp the Indian military's overall operational capabilities, fill the gaps in its air defence systems, night vision and surveillance capabilities, develop its indigenous defence industry and bring it at par with the modern well-equipped forces in the world. The defence trade between India and Israel has crossed the \$9 billion mark.<sup>2</sup>

The state of Israel was established in 1948 with the auspices of Britain and other European countries.<sup>3</sup> Pakistan, from day one, has

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<sup>&</sup>lt;sup>1</sup> Satish Kumar, *India's National Security: Annual Review 2013* (New Delhi: Routledge, August 12, 2015), 162.

<sup>&</sup>lt;sup>2</sup> Ibid.

<sup>&</sup>lt;sup>3</sup> Alan Baker, *Israel's Rights as a Nation-State in International Diplomacy* (Israel: Jerusalem Centre for Public Affairs, 2011), 77.

supported the cause of the Palestinians and refused to recognise the state of Israel, and played a significant role to support the Palestinian cause diplomatically at the United Nations. Even today, the Pakistani passport is valid for other countries in the world except Israel. This shows Pakistan's continued support to Palestinians and their cause.

India in early years of its independence did not show any great desire to improve its political or strategic ties with Israel. The linkages between both states remained cold until 1992.<sup>4</sup> After the breakup of the Soviet Union, increased violence in Kashmir, change in the global world order, the United States (U.S.) became the sole super power. This became a prime opportunity for India to improve its strategic ties with Israel, since the latter recieved immense political, economic and strategic support from the U.S. and its allies. The state of Israel learnt from its wars with the Arabs and improved its defence industry accordingly to mitigate threats from its hostile neighbours. The Bharatiya Janata Party (BJP) in 1992<sup>5</sup> realised this opportunity and moved towards Israel to overcome technological gaps in its ageing military systems. Another important factor was in Kashmir. India sought Israel's help in counterinsurgency tactics in occupied Kashmir.<sup>6</sup>

The other areas of defence collaboration have primarily focused on network-centric and electronic warfare capabilities, spy satellites, modern radars, anti-ballistic missile technology, reformation of main battle tanks, aircrafts, intelligence and counterterrorism techniques which Israel has mastered since its establishment.<sup>7</sup> Both countries have signed many pacts for defence procurement, avionics for the ageing Russian aircrafts and other military equipment. This is transforming the Indian Army, Navy and Air Force. However, the most entrenched partnership between the two states is in intelligence, counterterrorism and counterinsurgency skills.

Strategic defence ties between both states are picking up pace and are likely to create serious security challenges for South Asia, especially Pakistan. The defence industry of Israel is well-established and specialises in modern warfare capabilities. The association between India and Israel could undermine the conventional balance vis-à-vis Pakistan which may have to rely on strategic weapons to counter a conventionally and technologically superior adversary at the border. This article is divided in two parts. The first part highlights the defence collaboration between India

<sup>&</sup>lt;sup>4</sup> N.D. Arora, *Political Science for Civil Services Main Examination* (New Delhi: Tata McGraw-Hill Education, 2010), 48.

<sup>&</sup>lt;sup>5</sup> Stephen P. Cohen, *India: Emerging Power* (Washington, D.C.: Brookings Institution Press, 2004), 247.

<sup>&</sup>lt;sup>6</sup> Ninan Koshy, *Under the Empire: India's New Foreign Policy* (New Delhi: Left Word Books, 2006), 154.

<sup>&</sup>lt;sup>7</sup> Robert O. Freedman, *Contemporary Israel* (Philadelphia: West View, 2010), 446.

and Israel and how this partnership is giving a facelift to the Indian military. The second part discusses the impact of this Indo-Israel defence cooperation on Pakistan's security.

# **Cooperation in Ground Defence**

The Indian military is the third largest force in the world. Currently, the total size of the Indian military is about 1,346,000.<sup>8</sup> The Indian Army is the largest branch of the Indian military, with 1,150,900 servicemen, whereas the Air Force and Navy stands at 127,200 and 58,350 respectively. India also possesses a large Coast Guard force of about 9550 men. The Indian Paramilitary Troops are about 1,403,700.<sup>9</sup>

India is aspiring for the status of a global power. At the same, it wants to maintain a balance with its economically and militarily strong adversary China, and strategically compatible Pakistan. It is, therefore, working to overcome deficiencies in its overall military might. For said purpose, a massive modernisation programme in collaboration with Russia, America and Europe has been underway for many years. According to the Stockholm International Peace Research Institute (SIPRI), Indian imports of major weapons increased by 111 per cent from 2004 to 2015; and it accounted for 15 per cent of the global arms purchase. Major imports came from Russia (75 per cent), U.S.A. (12 per cent) and Israel (7 per cent).<sup>10</sup> The Indian military's defence allocation reached \$45.2 billion in 2014-15. For the same year, India allocated \$14.93 billion to weapons and equipment purchase.<sup>11</sup> The Israeli defence industry has opened its gates to India and enhanced cooperation between two countries will be discussed in the next paragraphs.

# Upgradation of T-72 Tanks and Infantry Command Vehicles

Electronic warfare has removed the time barrier in militaries around the globe. To achieve the element of surprise, a force must be equipped with a robust command and control structure along with night vision capabilities in its main battle tanks (MBTs). India has approached Israeli defence firms to refurbish its ageing T-72 tank with thermal imaging and better fire control

<sup>&</sup>lt;sup>8</sup> "Asia," The Military Balance 115, no. 1, February 10, 2015,

http://dx.doi.org/10.1080/04597222.2015.996361.

<sup>&</sup>lt;sup>9</sup> Ibid.

<sup>&</sup>lt;sup>10</sup> Pieter D. Wezeman and Siemon T. Wezeman, "Trends in International Arms Transfers, 2014" (SIPRI Fact Sheet, Stockholm International Peace Research Institute, Solna, 2015).

<sup>&</sup>lt;sup>11</sup> Vivek Raghuvanshi, "India Proposes 10 Per cent Budget Increase; 3.3 Per cent Boost for Procurement," *Defence News*, February 17, 2014,

http://archive.defencenews.com/article/20140217/DEFREG03/302170025/India-Proposes-10-Budget-Increase-3-3-Boost-Procurement.

systems to make it compatible with modern MBTs around the globe. In this regard, the Indian company Alpha Design Technologies (ADT) has partnered with Israeli firm Elop-Elbit. The head of the ADT claimed that the new T-72 MBT possess night vision range of about 300m.<sup>12</sup> The process to fit thermal imager fire control systems (TIFCS) started in 2014 and up till now 170 kits have been transferred to the Indian Army (IA). In addition to this, by the end of 2016, the Israeli firm will upgrade 1000 T-72 tanks with thermal imaging or night vision capabilities.<sup>13</sup>

The Elop-Elbit is also in contract to upgrade the Infantry Command Vehicles in the IA. The company has already transferred over 300 thermal imager standalone kits (TISK) which are going to add night vision capabilities for main gun firing and missiles. 969 such command vehicles were upgraded by the end of 2015.<sup>14</sup>

The upgradation of the T-72 MBTs will give the IA the required capabilities to fight without any time barrier at night; and work as a game changer during any military operation. The chances of having the element of surprise will also increase.

### Air Defence System: QR-SAM

An air defence system gives protection to ground forces from enemy missiles, aircrafts and UAVs. Indian incursions under any proactive military operation would invite a response from Pakistan. An effective air defence system may neutralise Pakistani missiles and allow India to carry out limited incursions under its Cold Start Doctrine. To overcome the weaknesses in its air defence, the Indian government inked a deal with Israel in 2009 for the supply of quick reaction surface-to-air missiles.<sup>15</sup> In 2012, it approved proposals to augment air defence capabilities for eight regiments with new procurements worth \$2.2 billion.<sup>16</sup> The SPYDER quick reaction SAM-QR has the potential to engage targets at 360° and the missiles can be unleashed within five seconds of its readiness mode. It can take down incoming missiles, aircrafts or drones at 15km range. The radar attached with this system has the ability to lockdown 60 targets

<sup>&</sup>lt;sup>12</sup> "The Secret of T-72 Main Battle Tank's Improved Night Vision," *Hindu*, February 19, 2015, http://www.thehindu.com/news/cities/bangalore/the-secret-of-t72-main-battle-tanks-improved-night-vision/article6911932.ece.

<sup>&</sup>lt;sup>13</sup> Ibid.

<sup>&</sup>lt;sup>14</sup> Ibid.

<sup>&</sup>lt;sup>15</sup> "Govt Nod for Rs 4k cr Israeli Surface-to-Air Missile System," *Times of India*, August 19, 2009, http://timesofindia.indiatimes.com/india/Govt-nod-for-Rs-4k-cr-Israeli-surface-to-air-missile-system/articleshow/4908764.cms?referral=PM.

<sup>&</sup>lt;sup>16</sup> "India Begins \$2.2-billion QR-SAM Procurement Effort," *LIVEFISTDEFENCE.com*, June 23, 2012, accessed October 23, 2015, http://www.livefistdefence.com/2012/06/india-begins-22-billion-qr-sam.html.

simultaneously. The radar is also fitted with advanced countermeasures to neutralise intense enemy electronic warfare capabilities in the battlefield.<sup>17</sup> This system will protect the Indian MBTs and infantry divisions from incoming Pakistani cruise missiles, aircrafts and drones. It is also an effective system to secure strategic installations, nuclear sites, bridges, and dams during a war.

# Tavor TAR- 21 Rifles and Galil Sniper

The Tavor is a 5.56x45mm caliber gun, weighing 3.3 kg., which makes it handy for Special Forces in close combat and counterinsurgency operations.<sup>18</sup> The Galil sniper is a highly advanced, long range gun with a high success rate. It has a magazine capacity of 25 rounds which helps it to continue firing without reloading. This gun is also equipped with tritium for night combat.<sup>19</sup>

All three branches of the Indian military use Tavor guns. The Indian government in 2007 signed a \$30 million contract to get 3,400 Tavor assault rifles from Israel; and became the first country in the world to use them.<sup>20</sup> The Indian Naval Special Forces (MARCOS)<sup>21</sup> received shipment of about 500 of these along with 30 Galil sniper rifles, worth about \$3.3 million in 2010.<sup>22</sup> These highly sophisticated guns would enhance the operational capabilities of the Indian Special Forces. The long-range Galil sniper would be critical for Pakistani security forces deployed close the border or Line of Control (LoC).

# **Cooperation in Air Defence**

During the 1990s, India and Israel signed defence pacts for the refurbishment of Indian aircrafts. Major areas of cooperation included the autonomous air combat manoeuvring instrumentation (AACMI) system,

<sup>&</sup>lt;sup>17</sup> "SPYDER Surface-to-Air Launcher for Python 5 and Derby Missiles, Israel," armytechnology.com, November 21, 2015, http://www.army-technology.com/projects/spyder/.

<sup>&</sup>lt;sup>18</sup> "Tavor Assault Rifle," Israel Weapon Industries, http://www.israel-weapon.com/?catid=%7Bbe33b6e6-080b-45b8-ad85c4e1e40d0422%7D.

<sup>&</sup>lt;sup>19</sup> "Galil Sniper," Israel Weapon Industries, November 25, 2015, http://www.israelweapon.com/default.asp?catid=%7BFC704F52-0DBF-48E6-A23F-650EFA687FDC%7D.

<sup>&</sup>lt;sup>20</sup> Efraim Inbar, *Israel's National Security: Issues and Challenges since the Yom Kippur War*, 1st ed (New York: Routledge: 2007), 181.

<sup>&</sup>lt;sup>21</sup> P.K. Chakravorty, "State of Modernization of the Indian Army," *India Strategic*, January 2014,

http://www.indiastrategic.in/topstories3160\_State\_of\_Modernisation\_of\_Indian\_Army.ht m.

<sup>&</sup>lt;sup>22</sup> "Indian Navy Commandos to Get Israeli Rifles," *Zee News*, January 12, 2011, http://zeenews.india.com/news/nation/indian-navy-commandos-to-get-israelirifles\_680109.html.

radars, avionics, laser-guided bombs and night vision capabilities for the Soviet era platforms in the IAF.

### The EHUD AACMI System

The IAF has launched a massive drive to modernise its ageing Soviet-era fleet. Modern warfare requires a highly professional, well-trained and unified force with up-to-date tactics and techniques. To upgrade its training modules, the IAF acquired the air combat maneuvering instrumentation (ACMI) system from Israel. This was a major defence deal between the two countries. The system is fixed at the high security Tactics and Air Combat Development Establishment (TACDE) at Jamnagar air base.<sup>23</sup>

In 2015, the Israeli Aerospace Industries (IAI) delivered its 1000th EHUD AACMI pod. The IAF is among the leading air forces in the world having incorporated this system in its training modules.<sup>24</sup> This is a significant development for the IAF in order to overcome its operational deficiencies, gaps and to acquire training on modern grounds. In addition, the AACMI provides real-time high dependability weapons simulation and hit\miss assessments for live training. This system also offers superior debriefing capabilities, including 'what if' scenarios. It also carries a high-end safety suite that includes anti-collision warnings.<sup>25</sup>

This system would not only boost IAF's air-to-air and air-to-ground training in real-time, it would help the Indian military to improve its overall coordination and synchronisation among its three arms (Air Force, Army and Navy) in any future conflict. Integration and synergy between the IAF would be detrimental to Pakistan's security. To counter such threats, Pakistan must also improve internal coordination between its Armed Forces through regular military exercises and with updated training modules.

### **Overhaul of the MiG-21 Fighters**

The Indian military is threatened by China and Pakistan because both countries have developed a strategic partnership and now they are manufacturing modern aircrafts with advanced technology, whereas the Indian military is relying on foreign countries for the development of its air

<sup>&</sup>lt;sup>23</sup> P.R. Kumaraswamy, *India and Israel: Evolving Strategic Partnership* (Ramat Gan: BESA Center for Strategic Studies, Bar-Ilan University, 1998), 40.

<sup>&</sup>lt;sup>24</sup> Joseph Weiss, "IAI Presents an Impressive Array of Technologies," *Indian Defence Review* 30, no.1 (2015), http://www.indiandefencereview.com/spotlights/iai-presents-an-impressive-array-of-

http://www.indiandefencereview.com/spotlights/iai-presents-an-impressive-array-oftechnologies/.

<sup>&</sup>lt;sup>25</sup> "IAI will Supply Elbit Systems Components Worth \$13 million for the Ehud, Air Combat Maneuvering Instrumentation (ACMI) Systems," Israel Aerospace Industries, April 5, 2011, http://www.iai.co.il/2013/32981-42456-en/MediaRoom\_News.aspx.

force. It has signed deals with Russia to develop the SU-30 MKI aircrafts together. But most of the Indian fleet is old and it requires overhaul. The Israeli defence firms are now helping India overcome its weakness in aviation. In early years of their partnership, these firms secured contracts to modernise the MIG-21 aircraft with laser-guided munitions.<sup>26</sup> The contracts to revamp MIG-21 achieved huge milestones in later years.

#### Long-Range Tracking Radars (LRTRs)

Both states are also cooperating in long-range tracking radars to detect incoming missiles from 800-1,000 km.<sup>27</sup> This system has been developed by India's Defence Research and Development Organisation (DRDO) with the support of Israeli defence firm ELTA. The radar is currently with the IAF, but it is expected to be used in India's ballistic missile defence system. The system would enable the Indian forces to detect missiles at long-range and give ample time to its decision-makers to neutralise them in the air.

#### Barak-8 Long-Range Surface-to-Air Missile (LR-SAM)

India is the largest recipient of Israeli defence exports: the mutual trade between both states reached \$3.4 billion in 2014.<sup>28</sup> India and Israel have been working together for the development of the Barak-1 short-range antimissile system. But with the passage of time, the nature of threats and technological advancements have compelled India to add more up-to-date anti-missile systems in its inventory to counter any threat emanating from China or Pakistan.

The Barak-8 LR-SAM is an advanced version of the previous Barak-1 anti-missile system. The IAI carried out its first successful test of the Barak-8 in 2014. This system would protect Indian military from incoming enemy missiles, aircraft and armed drones.<sup>29</sup> It has the ability to intercept targets at about 70km.<sup>30</sup> There are reports that IAI is working to improve its range up to 150 km in coming years.<sup>31</sup> India has invested about \$1.5 billion in the Barak-8 programme. The LR-SAM is capable of taking down supersonic

<sup>&</sup>lt;sup>26</sup> Inbar, Israel's National Security.

<sup>&</sup>lt;sup>27</sup> Ajai Shukla, "Star Wars: India Set to Test Missile Defence Shield," *Business Standard*, April 4, 2015, http://www.business-standard.com/article/current-affairs/star-wars-indiaset-to-test-missile-defence-shield-115040400719\_1.html.

<sup>&</sup>lt;sup>28</sup> Gili Cohen, "Under Modi, Israel and India Forge Deeper Business Ties," *Haaretz*, November 20, 2014, http://www.haaretz.com/israel-news/business/1.627348.

<sup>&</sup>lt;sup>29</sup> Gili Cohen, "Israel, India Successfully Test Flagship Anti-Missile System," *Haaretz*, November 11, 2014, http://www.haaretz.com/israel-news/.premium-1.625754.

<sup>&</sup>lt;sup>30</sup> Ibid.

<sup>&</sup>lt;sup>31</sup> Robin Hughes, "IAI En Route to Extended Range Barak-8ER," IHS Jane's 360, August 9, 2015, http://www.janes.com/article/53532/iai-en-route-to-extended-range-barak-8er.

cruise and skimming missiles at low altitude.<sup>32</sup> With enhanced range, the Indian military will be able to operate fearlessly at sea and air against any missile or other airborne threats.

The Indian Navy also hopes to equip its latest warships INS Kolkata and INS Kochi with 32 Barak-8 missiles. These missiles are equipped with the sophisticated tracking system developed by Israel, whereas the rocket motor in this system was manufactured in India.<sup>33</sup> The Barak-8 missile has the potential to neutralise any incoming anti-ship missile. Another important feature of this system is to track hundreds of aerial targets at the same time at about 250 km away from its deployed position.<sup>34</sup> Such a capability in the Indian Navy or Air Force would work as a force multiplier and give operational edge to the Indian military vis-à-vis Pakistan. Pakistan's cruise missile Babur, JF-17 Thunder and F-16 aircrafts may face an unprecedented challenge from this system in case of any conflict with India.

### **Cooperation in Naval Defence**

# Israel Aerospace Industries (IAI) cooperation in INFACT T-82 and Super Dvora MKII Boats

In 2003, the Indian Navy received the fast attack craft INFACT T-82 from IAI. This is the fastest naval vessel so far in the Indian Navy with the ability to operate at a speed of 40 knots in a 550 mile area. According to the former Chief of Western Naval Command, Vice Admiral Arun Prakash, with this Indian Navy's offensive and defensive capabilities at sea would get a significant boost. The night vision features of the craft would work as a force multiplier against maritime threats such as terrorists, pirates, and smugglers and help to track them about two km in-shore without any time barrier. It also possesses the capacity to operate in shallow waters where major crafts cannot operate.<sup>35</sup>

<sup>&</sup>lt;sup>32</sup> "Barak-8 Missile to Undergo Testing in October," *Hindu Business Line*, July 28, 2015, http://www.thehindubusinessline.com/economy/barak8-missile-to-undergo-testing-inoct/article7474532.ece?css=print.

 <sup>&</sup>lt;sup>33</sup> Vishnu Som, "India's Most-Advanced Warship to Get the Missiles that were Missing," *NDTV*, February 6, 2015, http://www.ndtv.com/india-news/indias-most-advanced-warship-to-get-the-missiles-that-were-missing-737232.

<sup>&</sup>lt;sup>34</sup> Ibid.

<sup>&</sup>lt;sup>35</sup> "Israel-Built Ship Commissioned in Indian Navy," Zee News, October 9, 2003, http://zeenews.india.com/news/nation/israelbuilt-ship-commissioned-in-indian-navy\_ 124984.html.

The Indian Navy inducted two Dvora MK-2 patrol boats from Israel in 1996 in a deal of worth \$10 million.<sup>36</sup> The Dvora MK-2 boats are significant for offshore operations, naval intelligence, command and control at sea. These boats are also an important addition to the Indian Navy to protect its exclusive economic zone. The Dvora MK-2 has maximum speed of 45 knots and it can operate in an area of 700km.<sup>37</sup> This vessel is also equipped with day and night surveillance and weapon locating systems which helps the vessel to detect and destroy enemy fast boats.<sup>38</sup>

The IAI also manufactures advanced Dvora-3 fast boats with superior surveillance and reconnaissance capabilities at sea. This vessel is equipped with precision weapon systems along with the ability to carry out day and night operations in all-weather situations. This new vessel could also be equipped with an additional short and long-range weapon system. With the Dvora-3, the Indian Navy will be able to navigate 1,500 nautical miles beyond its shores.<sup>39</sup> In the future, India and Israel may also work in partnership to induct these vessels into the Navy. This would give it an edge against Pakistan when it comes to overlapping claims between the two countries over the Exclusive Economic Zone in the Arabian Sea, specifically in the Sir Creek area.

#### Upgradation of Ka-25 Anti-submarine Helicopters

The Israel defence industries brought overall improvement in the avionics of the Indian anti-submarine helicopters along with the refurbishment of its maritime surveillance aircrafts.<sup>40</sup>The Ka-25 helicopter is an old Soviet technology, but upgraded with the help of Israel. This helicopter has maximum speed of about 209 km/h and its range is about 400km. It is equipped with conventional torpedoes, but may be equipped with nuclear depth charges.<sup>41</sup> The upgradation of this helicopter would enhance Indian navy's anti-submarine and surveillance capacity at sea.

<sup>&</sup>lt;sup>36</sup> Efraim Inbar and Alvite Singh Ningthoujam, "Indo-Israeli Defence Cooperation in the Twenty-First Century," Rubin Center for Research in International Relations, December 22, 2011,

http://www.rubincenter.org/2011/12/indo-israeli-defence-cooperation-in-the-twenty-firstcentury/#\_edn12.

<sup>&</sup>lt;sup>37</sup> "Super Dvora 2," Bharat Rakshak, accessed November 25, 2015,

http://www.bharat-rakshak.com/NAVY/Ships/Active/170-Super-Dvora.html. <sup>38</sup> Ibid.

<sup>&</sup>lt;sup>39</sup> "Super Dvora MK-3 Patrol Boats, Israel," Naval-technology.com, accessed November 25, 2015, http://www.naval-technology.com/projects/super-dvora-mkiii-patrol-boats/

<sup>&</sup>lt;sup>40</sup> Rajendra Abhyankar, "The Evolution and Future of India-Israel Relations", research paper no. 6 (S. Daniel Abraham Center for International and Regional Studies, Aspen Institute India, The Harold Hartog School of Government and Policy, Tel Aviv University, Tel Aviv, 2012), http://www.tau.ac.il/humanities/abraham/india-israel.pdf.

<sup>&</sup>lt;sup>41</sup> "Kamov Ka-25 Hormone," *Military-Today.com*, November 25, 2015,

# **Space Collaboration**

#### Cooperation in TechSAR

Contemporary warfare is mostly about information gathering capabilities of one country against the other. The more a military is equipped with space assets and aware of its enemy's disposition, the more it has information superiority in the battlefield. India and Israel have developed strategic ties to overcome gaps in each other's information warfare capabilities. In 2008, India launched the TechSAR Israeli spy satellite into orbit,<sup>42</sup> to enhance its surveillance capabilities against Iran and other potential enemies in and around the region.<sup>43</sup> The TechSAR is a weather-friendly satellite with ability to operate even at night with enhanced video quality. It is considered to be the most advanced spy satellite launched by both states.<sup>44</sup> The launch has improved India's standing amongst other developed countries in the field of space technology and strengthened its strategic ties with Israel.

The launch of TechSAR does not mean that it will only focus on Iran or other Middle Eastern countries, its presence is also detrimental to Pakistan's national security.<sup>45</sup> India may also benefit from this satellite to get crucial information about Pakistan's force deployment, movements close to the border, its strategic assets and key civil-military installations.

#### **RISAT-II** Spy Satellite

Similarly, the Indian military launched the RISAT-II spy satellite with the help of Israel in 2009. This satellite has has the ability to keep 24/7 watch over Pakistan even when an area is covered by clouds or during rain. The satellite gives India the capacity to closely track military activities deep inside Pakistan. Even though to date, this satellite is only nominally operational, India would be able to see troop movement along the international border or Line of Control.<sup>46</sup> Its key is giving high-resolution images with precision. Data and commands can be sent through this satellite

http://www.military-today.com/helicopters/kamov\_ka25\_hormone.htm.

<sup>&</sup>lt;sup>42</sup> Eligar Sadeh, *The Politics of Space: A Survey* (New York: Routledge, 2010), 74.

<sup>&</sup>lt;sup>43</sup> "India Launches Israeli Satellite," BBC News, January 21, 2008,

http://news.bbc.co.uk/2/hi/south\_asia/7199736.stm.

<sup>&</sup>lt;sup>44</sup> Ibid.

<sup>&</sup>lt;sup>45</sup> K. Subrahmanyam, "'Spy' Satellite Launch: India's Israeli Turn?" *Economic Times*, February 15, 2008,

http://economictimes.indiatimes.com/articleshow/2783723.cms?utm\_source=contentofinte rest&utm\_medium=text&utm\_campaign=cppst.

<sup>&</sup>lt;sup>46</sup> Masood ur Rehman Khattak, "Indian Military's Cold Start Doctrine: Capabilities, Limitations and Possible Response from Pakistan" (SASSI Research Paper no. 42, South Asian Strategic Stability Institute, London, 2010), http://www.sassi.org/wpcontent/uploads/2012/05/RP-32-Masood-Indian-Militarys-Cold-Start-Doctrine-Mar-2011.pdf.

to cruise missiles. Such dominance in the field of surveillance and reconnaissance can be very damaging for Pakistan.

# Anti-Ballistic Missile (ABM) Technology

The ABM technology is complex. It cannot provide 100 per cent defence against incoming enemy missiles, even the U.S. with its sophisticated technology witnessed huge setbacks against Iraqi scud missiles in the first Gulf War.<sup>47</sup> Nevertheless, India is developing ABM technology with the assistance of Israel based on the Israeli Arrow-II system. India also acquired the green pine radar from Israel in 2001. This radar has the ability to detect incoming missiles at 500km range.<sup>48</sup> India is also looking for Iron Dome anti-missile shields for protection against incoming missiles at short-range.<sup>49</sup> Israel manufactures Iron Dome systems with 84.2 per cent kill capability against incoming short-range missiles.<sup>50</sup> This system would protect India from Pakistan's short-range Nasr-IX tactical nuclear missile.

Israel has also tested the advanced version of Iron Dome David's Sling missile defence system which has the ability to shoot down surface-to-air missiles (SAMs) or air-to-surface missiles (ASMs) at 300km range.<sup>51</sup> In the future, the Indian military may negotiate the transfer of this technology. This system would undermine nuclear deterrence in South Asia and give confidence to the Indian military to carry out surgical strikes or initiate limited war under its proactive military doctrine.

# **Collaboration in Surveillance and Reconnaissance**

More than 87 countries in the world possess drone technology and utilise it for surveillance purposes. It is expected that the global spending on UAVs would jump from \$6.6 billion to \$11.4 billion in 2022.<sup>52</sup> This shows that reliance on drone technology is increasing day-by-day. The Indian military

<sup>&</sup>lt;sup>47</sup> Narayan Menon, "Ballistic Missile Defence System for India," *Indian Defence Review* 27, no. 3 (2012), http://www.indiandefencereview.com/spotlights/ballistic-missile-defence-system-for-india/.

<sup>&</sup>lt;sup>48</sup> "Arrow 2 Theatre Ballistic Missile Defence System, Israel," *Army-technology.com*, http://www.army-technology.com/projects/arrow2/.

 <sup>&</sup>lt;sup>49</sup> Sandy Gordon, *India's Rise as an Asian Power: Nation, Neighbourhood, and Region* (Washington, D.C.: Georgetown University Press, 2014), 134.

<sup>&</sup>lt;sup>50</sup> "Israel to Help India Develop Missile Defence Shield," UPI.com, February 7, 2014, http://www.upi.com/Business\_News/Security-Industry/2014/02/07/Israel-to-help-Indiadevelop-missile-defence-shield/15531391795774/.

<sup>&</sup>lt;sup>51</sup> Avi Lewis, "Israel's New Anti-Ballistic Missile System Phenomenal," *Times of Israel*, April 1, 2015, http://www.timesofisrael.com/israel-successfully-tests-new-anti-ballisticmissile-system/.

<sup>&</sup>lt;sup>52</sup> S. Gopal, "Drones: The Game Changers in Future Wars," *Indian Defence Review* 30, no.1 (2015), http://www.indiandefencereview.com/news/drones-the-game-changers-in-future-wars/.

is eyeing to get armed UAVs from Israeli defence firms to utilise them where manned flights or life of the soldiers will be at risk. The Indian military has already deployed Israeli UAVs close to the border with Pakistan to monitor the LoC, movement of suspected insurgents, and Pakistan military's deployment.<sup>53</sup>

#### Israeli Heron UAV

The Indian military is relying on Israel for the induction of sophisticated UAVs. In 2001, the Indian military signed a deal with an Israel defence firm to supply UAVs at \$7.2 million per craft. In 2003, India placed an order worth \$130 million for 18 Israeli Heron UAVs.<sup>54</sup> To boost its partnership, India has established a division in Hyderabad for repairs and other services, where Indian defence firm Hindustan Aeronautics Limited (HAL) provides spare parts and IAI shares equipment testing of the drones.<sup>55</sup>

The Heron can loaf in the air for a whole day without refueling. The IAI Chief in 2011 claimed that Israel is the leading supplier of UAVs around the globe since it sold more than 1000 UAVs to 42 countries worldwide.<sup>56</sup> These drones would provide India with an edge in the sky against Pakistan's armed UAVs.<sup>57</sup> Their induction would enhance Indian military's electronic warfare capabilities essential for quick and swift operations. The UAV could be used for strategic and tactical electronic warfare missions.<sup>58</sup> According to Gurmeet Kanwal, the Indian military would get Israeli Heron armed drones at the end of 2016, which may give India knack to carry out deep-strike capability.<sup>59</sup>

#### Israeli Heron TP

The IAI is working with IAF to supply ten Heron TP drones worth \$400 million with the potential to carry out missile strikes against enemy forces or suspected insurgents across the border.<sup>60</sup> The IAI is manufacturing advanced UAVs with an amplified endurance of 45 hours in the air. This drone is equipped with a highly advanced radar system which can scan

<sup>&</sup>lt;sup>53</sup> Sanjeev Miglani, "India Turns to Israel for Armed Drones as Pakistan, China Build Fleets," *Reuters*, September 22, 2015, http://in.reuters.com/article/2015/09/21/india-israeldrones-idINKCN0RL2EC20150921.

<sup>&</sup>lt;sup>54</sup> Freedman, *Contemporary Israel*, 442.

<sup>&</sup>lt;sup>55</sup> Ibid., 443.

<sup>&</sup>lt;sup>56</sup> Medea Benjamin, Drone Warfare (New York: OR Books, 2013), 2004.

<sup>&</sup>lt;sup>57</sup> Ibid.

<sup>&</sup>lt;sup>58</sup> Joseph Noronha, "The Promise of Soft-Kill," *Indian Defence Review* 26, no. 2 (2011), http://www.indiandefencereview.com/news/the-promise-of-soft-kill/.

<sup>&</sup>lt;sup>59</sup> Ibid.

<sup>60</sup> Ibid.

large areas during harsh weather conditions. It can detect movement on the ground with high precision and clarity. The Heron TP is equipped with advanced electronic systems and laser beams to coordinate and direct missile strikes by a jet fighter.<sup>61</sup> The inclusion of this drone technology would be a dangerous development for Pakistan. In case of any Mumbai-type terrorist attack by some terrorist group, the Indian military may respond with surgical strikes with such drones in e.g. Azad Jammu and Kashmir against suspected hideouts of insurgents. Such a possibility cannot be ignored, and may provoke countermeasures, because Pakistan would never tolerate such an act.

# Super Heron UAV

The Israelis are also developing an advanced version of Heron UAV introduced in 2007. The Super Heron drone has the ability to dawdle over an area of about 1000km and can remain in the air for 45 hours at an altitude of 30,000 feet.<sup>62</sup> Moreover, this UAV is also equipped with innovative avionics and an improved fire system which gives it operational autonomy during a conflict. The Super Heron has been in use for reconnaissance and surveillance missions on the ground and at sea. The Indian military in future may also request Israel to supply these highly advanced and technologically superior UAVs.

# Harpy Missile-Radar Killer

The Indian Army has received a few Harpy missiles from Israel. This missile system is designed to detect and destroy enemy radars and observation capabilities. The missile can be propelled from multiple launchers at sea or from the ground. It has the ability to take down targets during the day or night in all-weather conditions at a range of about 500km, which makes it a lethal weapon system against the reconnaissance capabilities of any enemy.<sup>63</sup> It is dangerous for any enemy's surface-to-air missile sites, mobile launchers, command and control vehicles in the battlefield. During conflict, if Pakistan's radars are deactivated with the help of this missile, the latter's position against Indian missiles, aircrafts or UAVs would be compromised.

<sup>&</sup>lt;sup>61</sup> "Heron TP," Israel Aerospace Industries, accessed December 5, 2015, http://www.iai.co.il/2013/18900-37204-

en/BusinessAreas\_UnmannedAirSystems\_HeronFamily.aspx.

<sup>&</sup>lt;sup>62</sup> "Super Heron," Israel Aerospace Industries, accessed December 5, 2015, http://www.iai.co.il/2013/18900-45847-

en/BusinessAreas\_UnmannedAirSystems\_HeronFamily.aspx.

<sup>&</sup>lt;sup>63</sup> "Harpy," *Israeli-Weapons.com*, accessed December 5, 2015, http://www.israeli-weapons.com/weapons/aircraft/uav/harpy/HARPY.html.

# Harop Missile-Suicidal Drones

Similarly, the Israel Aerospace Industries has also developed a 'suicidal UAV' which hovers over the battlefield for over six hours; identifies the target on the ground and self-destructs into the intended object. This UAV has a range of about 1000 km and ability to operate in darkness.<sup>64</sup> It has demonstrated enhanced maneuvering and target acquisition during trials. This UAV can also carry a 15kg warhead which makes it a lethal weapon in modern warfare.<sup>65</sup>

Another important feature of this UAV missile is that, it is remotely controlled and a commander may select a target of his choice during a war.<sup>66</sup> In 2009, the IAF ordered 10 Harop UAVs from Israel in a \$100 million deal.<sup>67</sup> These sophisticated UAVs from Israeli defence firms would uplift India's surveillance and reconnaissance capabilities against Pakistan. The Indian military may use these advanced drones for multiple purposes, for instance, close air support to the ground forces during conflict. Apart from these conventional roles, the advance UAVs of India could also be used for search and rescue operations.

#### Israeli Phalcon AWACS

The Indian military achieved another milestone when India, Israel and Russia signed a deal in 2004 worth \$1.1 billion to deliver three Airborne Warning and Control Systems (AWACS) in 2009, 2010 and 2011, respectively.<sup>68</sup> The Phalcon AWACS radar and communication system is integrated with the Russian llyushin-76 heavy transport aircraft.<sup>69</sup> India is going to add two more Phalcon AWACS and four aerostat radars from Israel under a deal worth \$1.5 billion.<sup>70</sup> These acquisitions would amplify India's surveillance and reconnaissance capabilities.

<sup>&</sup>lt;sup>64</sup> Lea Speyer, "Israeli-Made 'Suicidal' Drone Doubles as Missile," *Breaking Israel News*, June 13, 2014, http://www.breakingisraelnews.com/16429/israeli-made-suicidal-dronedoubles-missile/#wJB0VcGTeVMUjg91.99.

<sup>&</sup>lt;sup>65</sup> Yaakov Lappin, "IAI Exhibits Upgraded HAROP 'Suicide Drone' for Clients," *Jerusalem Post*, July 6, 2015, http://www.jpost.com/Israel-News/IAI-exhibits-upgraded-HAROP-suicide-drone-for-clients-405266.

<sup>66</sup> Ibid.

<sup>&</sup>lt;sup>67</sup> "Harop Loitering Munitions UCAV System, Israel," *Airforce-technology.com*, accessed December 5, 2015. http://www.airforce-technology.com/projects/haroploiteringmuniti/.

<sup>&</sup>lt;sup>68</sup> Laxman Kumar Behera, "Modernisation of the Indian Air Force," International Relations and Security Network, January 29, 2013,

http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?id=157423.

 <sup>&</sup>lt;sup>69</sup> Andrew T. H. Tan, *The Global Arms Trade: A Handbook* (New York: Routledge, 2014), 69.

<sup>&</sup>lt;sup>70</sup> "Israel Offers Top-Notch Military Technologies for 'Make in India' Endeavor," *Times of India*, February 20, 2015, http://timesofindia.indiatimes.com/india/Israel-offers-top-notch-military-technologies-for-Make-in-India-endeavour/articleshow/46307051.cms.

The Phalcon has a maximum speed of 972 km/h with high accuracy; ability to detect highly maneuvering targets; transmit information without any time barrier 24/7 in any weather; track over a 100 targets and intercept at least half of them with aircraft and surface-to-air missiles. In addition, track launch is achieved in 2 to 4 seconds which makes it a highly sophisticated surveillance system.<sup>71</sup> Moreover, this system also covers all moving objects from the ground level to 40,000 ft and can track a target 500km deep inside enemy territory.<sup>72</sup> It can also spot an enemy missile when it is fired. Such real-time information would help the Indian decision-makers to take appropriate countermeasures on time and respond accordingly.<sup>73</sup>

The IAF is also establishing a base for the AWACS at the Bhisiana Air Force Station near Bathinda, Indian Punjab. These forward bases would give the IAF enhanced monitoring capabilities against Pakistan. India would be able to sneak deep inside Pakistan and intercept communications.<sup>74</sup> The Indian military is planning to add 15 more such systems to enhance its observation and reconnaissance potential. The latest inductions would have range beyond those of conventional radars and other electronic warfare systems.<sup>75</sup> The purchase of these highly sophisticated surveillance systems would also augment Indian military's counter-air capabilities.<sup>76</sup>

# **Cooperation in Counterterrorism and Intelligence Sharing**

India and Israel's union in counterterrorism and intelligence sharing is momentous.<sup>77</sup> Both countries are closely aligned against alleged terrorism and insurgencies in India. But their intelligence partnership dates back to 1960 when the then Prime Minister of India Indira Gandhi authorised

<sup>&</sup>lt;sup>71</sup> "IAI Phalcon 707," Federation of American Scientists, September 21, 1999, https://fas.org/man/dod-101/sys/ac/row/phalcon.htm.

<sup>&</sup>lt;sup>72</sup> Prashant Dikshit, "The Value of the Phalcon AWACS for India," (New Delhi: Institute of Peace and Conflict Studies), March 22, 2004,

http://www.ipcs.org/article/air-force/the-value-of-the-phalcon-awacs-for-india-1347.html.

<sup>&</sup>lt;sup>73</sup> Sudhi Ranjan Sen, "More Eyes in the Sky for Air Force: India to Buy 2 More Radar Mounted Aircraft," *NDTV*, March 28, 2015, http://www.ndtv.com/india-news/more-eyesin-the-sky-for-air-force-india-to-buy-2-more-radar-mounted-aircraft-750422.

 <sup>&</sup>lt;sup>74</sup> Vijay Mohan, "IAF to Set up AEW&CS Base in Punjab," *Tribune India*, July 4, 2015, http://www.tribuneindia.com/news/nation/iaf-to-set-up-aew-cs-base-inpunjab/102072.html.
<sup>75</sup> "Know More about Indian Air Force's New 'Eye-in-the-Sky' Phalcon," *India TV News*,

<sup>&</sup>lt;sup>75</sup> "Know More about Indian Air Force's New 'Eye-in-the-Sky' Phalcon," *India TV News*, February 10, 2014, http://www.indiatvnews.com/news/india/latest-news-indian-air-forcenew-eye-in-the-sky-phalcon-32753.html?page=2.

<sup>&</sup>lt;sup>76</sup> Ramtanu Maitra, "India's Phalcon: Long-Range Problems," Asia Times, March 9, 2004, http://www.atimes.com/atimes/South\_Asia/FC09Df05.html.

<sup>&</sup>lt;sup>77</sup> Kanti Bajpai, Saira Basit, and V. Krishnappa, *India's Grand Strategy: History, Theory, Cases* (New Delhi: Routledge, 2014), 187.

clandestine security cooperation with Israel.<sup>78</sup> Both states sought greater intelligence cooperation because they considered Pakistan a source of terrorism in India.<sup>79</sup>

Since then, Israel helped India establish a Special Protection Group (SPG) in 1980,<sup>80</sup> to protect foreign dignitaries, key ministers, heads of strategic organisations, nuclear scientists and important personnel involved in strategic decision-making. It has also extended its counterterrorism training to the National Security Guard (NSG) of India to mitigate internal security threats. India received considerable help from Israel in the 1999-post Kargil situation to control insurgency in Kashmir with the help of advanced UAVs, radars, surveillance and reconnaissance systems.<sup>81</sup> The focus of this partnership was intelligence sharing, training of security forces and transfer of crucial technology and equipment.<sup>82</sup>

In addition, the thousands of Indian Special Forces (ISF) who received training in Israel, along with modern weapons and equipment, has brought positive change in the Indian military's counterterrorism skills.<sup>83</sup> The result of the Israeli training to the Indian SWAT Team is evident from the recent successful operation in Gurdaspur. The ISF cleared militants from a police station in Gurdaspur and demonstrated their professional expertise in counterterrorism. These commandos were part of a team of 80 Special Forces who received training in Israel.<sup>84</sup>

The Indian Army acquired a long-range reconnaissance and observatory system (LORROS) to check infiltration of insurgents from across the LoC.<sup>85</sup> The LORROS provides round the clock surveillance of the LoC in haze, fog, rain or snowfall. This system provides accurate and highly reliable information about the LoC breaches and helps the Indian military to counter infiltration in time.<sup>86</sup> India's intelligence agency

commandos-trained-by-israel-team/.

 <sup>&</sup>lt;sup>78</sup> Ashok Kapur, *India: From Regional to World Power* (New York: Routledge, 2006), 215.
<sup>79</sup> Ibid.

<sup>&</sup>lt;sup>80</sup> Musa Tuzuner, *Intelligence Cooperation Practices in the 21st Century: Towards a Culture of Sharing* (Amsterdam: IOS Press, 2010), 38.

<sup>&</sup>lt;sup>81</sup> Ibid.

 <sup>&</sup>lt;sup>82</sup> Mehdi Amineh (ed.), *The Greater Middle East in Global Politics: Social Science Perspectives on the Changing Geography of the World Politics* (Netherlands: Brill, 2007), 422.

<sup>&</sup>lt;sup>83</sup> Kanchan Vasdev, "Gurdaspur Terror Attack: 28 Elite Commandos Trained by Israel Team," *Indian Express*, July 28, 2015, http://indianexpress.com/article/india/india-others/gurdaspur-terror-attack-28-elite-

<sup>&</sup>lt;sup>84</sup> Majid Jahangir, "Soldiers Battle Infiltration with Hi-tech Surveillance Gadgets," *Tribune India*, May 6 2015, http://www.tribuneindia.com/news/jammu-kashmir/soldiers-battle-infiltration-with-hi-tech-surveillance-gadgets/76649.html.

<sup>&</sup>lt;sup>85</sup> Ibid.

<sup>&</sup>lt;sup>86</sup> V.S. Subrahmanian et al., *Indian Mujahideen: Computational Analysis and Public Policy*, (Basel: Springer International Publishing, 2013), 130.

Research and Analysis Wing (RAW) and Israeli intelligence agency MOSSAD have closely worked together to mitigate common threats allegedly emanating from the Pakistani side of Kashmir and India-based insurgent groups.<sup>87</sup>

Both states have also emphasised improving bilateral intelligence ties by swapping vital information about major terrorist outfits, their sources of funding, employment strategies and training techniques etc. <sup>88</sup> This intelligence sharing will enhance India's counterterrorism and improve its capacity in law enforcement in turbulent areas like Indian held Kashmir and its Eastern parts. Indian intelligence agencies would also benefit from MOSSAD's training, forensic and technological capabilities to overcome operational deficiencies in RAW.

Joint military exercises also take place under a working group to augment defence ties and enhance Indian war fighting capabilities.<sup>89</sup> These exercises are helping India overcome its operational weaknesses and become an agile force equipped with the most up-to-date weapons and tactics needed in contemporary warfare. A well-trained and highly equipped ISF may pose serious security threats to Pakistan in close combat situations. The advance training by Israel may give confidence to Indian troops to carry out surgical strikes on the same pattern the U.S. did in Abbottabad (Pakistan) to locate and eliminiate Osama bin Laden.

# **Implications for Pakistan's Security**

The Indo-Israel strategic collaboration would have far reaching implications for Pakistan's security. The Indian military is already in the process of revamping its network-centric and electronic warfare capabilities with the help of Israel. Such a transformation may expose the Pakistan military's vulnerabilities in modern war fighting techniques. The edge in information warfare will be dangerous for Pakistan because contemporary warfare heavily depends on it. A country with superior assets in space will also have an advantage over its enemies. In the South Asian context, the Indian military's defence superiority will seriously hamper the balance of power

<sup>&</sup>lt;sup>87</sup> Ninan Koshy, "India-Israel Anti-Terror Axis Evolves," Asia Times, February 2, 2013, http://www.atimes.com/atimes/South\_Asia/OB02Df01.html.

<sup>&</sup>lt;sup>88</sup> Ronak D. Desai and Xenia Dormand, "Indo-Israeli Relations: Key Security Implications," (Robert and Renée Belfer Center for Science and International Affairs, Harvard University, Cambridge, 2008),

http://belfercenter.hks.harvard.edu/files/Indo-Israeli%20Relations.pdf.

<sup>&</sup>lt;sup>89</sup> "Report: Indian, Israeli Elite Units to Hold Joint Military Drill," *Algemeiner*, October 12, 2015, http://www.algemeiner.com/2015/10/12/report-indian-israeli-elite-units-to-hold-joint-military-drill/#.

and put Pakistan in a precarious situation to allocate more resources on defence instead of education, healthcare and human resource development.

The concept of modern warfare is based on the pace and the ability of a military force to operate without any time barrier. India, with Israel's help, has equipped its space assets, air force and main battle tanks with night vision capabilities to carry out quick and swift operations and achieve an element of surprise against Pakistan. Moreover, surveillance equipment and long-range radars would increase the outreach of Indian forces even beyond its borders to infiltrate Pakistani territory. Under such circumstances, the chances of a limited war may increase, which would be dangerous for peace and stability in the region.

Advancement in the field of Unmanned Aerial Vehicles (UAVs) has totally changed the concept of modern warfare. Now, drones are used not only for surveillance or reconnaissance purposes, but are also used to achieve military targets. The Israel defence industry has achieved huge milestones in the field of UAVs. It is considered to be the leading supplier of long-range armed UAVs in the world. India has added long-range armed UAVs to keep a close eye on Pakistan and other neighbours in the region. Other than UAVs for surveillance purposes, Israel has developed suicidal drones. The Harpy and Harop come in the category of such UAVs which would pose serious a threat to Pakistan military's command, control and communication centres during conflict. In addition, key defence installations, radars, missile launch sites, mobile launchers, and other sensitive assets would be in grave danger. India would have the ability to take them down without any hitch, putting Pakistan's security at risk. These drones are highly accurate and possess deadly explosive material to completely destroy important military targets on the battlefield.

The strategic significance of spy satellites can also not be ignored in contemporary warfare. In our context, the space assets of the Indian military, especially Risaat-II satellite could expose troop movement and deployment patterns along the international border and Line of Control. The Indian military can keep round the clock watch over Pakistani territory in all weather conditions; monitor Pakistan military's activities; and have sufficient time for countermeasures.

India's intelligence agency, Research and Analysis Wing, has been active against Pakistan since its inception. To revamp this intelligence institution, India has sought the help of Israel as discussed earlier. The most important aspect of the Indo-Israel strategic partnership is this cooperation in counterinsurgency, terrorism and intelligence sharing. RAW is getting transformed with modern intelligence gathering techniques, gadgets, equipment and forensic expertise by the Israeli intelligence agency MOSSAD. It may apply these advance and sophisticated skills against

Pakistan. Indian and Israeli intelligence agencies may ignite sectarian strife in Pakistan, train and fund anti-Pakistan elements in Tehrik-i-Taliban Pakistan and Balochistan-based rebel groups. All these scenarios are worrisome for Pakistan and need to be tackled with an effective counterintelligence operation. This requires our intelligence agencies to overhaul their spying methods, training and techniques. In addition, Pakistan's intelligence agencies must adopt sophisticated skills according to the changing environment in the field of intelligence and covert warfare.

Radars play an important role in warfare; they provide advance information about enemy aircrafts, UAVs, missiles and other aerial threats. Israel is an expert in electronic warfare capabilities. It has the ability to equip India with highly advanced radars. This is another dangerous development in South Asia. India with the help of Israel also plans to induct the Iron Dome missile defence system and other modern long-range SAMs. These weapon systems would undermine nuclear deterrence in South Asia. The Phalcon airborne warning and control system (AWACS) would give the Indian military ability to detect and track Pakistan's air attack from a long distance giving enough time to the Indian decision-makers to repulse it. In such a situation, Indian policymakers may find the gap to exercise their limited war Cold Start doctrine against Pakistan. The aggressive military doctrine coupled with modern radars, weapons and equipment would seriously challenge regional and national security.

### Conclusion

The Indo-Israel strategic partnership is well-established and based on mutual benefit and threat perception. Both countries share common interests which encompass internal security, counterterrorism, defence trade and intelligence sharing. Their bilateral defence ties would see further growth because India considers Israel a reliable and trustworthy supplier of crucial defence technologies. Israel is also expanding its defence industry and is expanding its outreach in global defence trade.

Pakistan must take concrete measures to mitigate these security threats. The possible options include enhancing its strategic ties with China, United States and Russia. Pakistan is already using the U.S. F-16s, and manufacturing the JF-17 Thunder aircraft in collaboration with China. Recently, Russia has also shown interest in sharing its defence technology with Pakistan. Though, these countries (except China) have a strong relationship with India, in a competitive, capitalist world, short-term alliances for monetary benefits are possible. India imports weapons from Russia and the U.S. at the same time. Why not Pakistan? It is possible that Pakistan and Russia can expand their defence ties. Russian defence industry is strong and can fulfill Pakistan's defence needs. Russian long-range surface-to-air missile systems, highly sophisticated radars, advanced main battle tanks and fifth generation aircrafts would be a force multiplier for Pakistan. What matters is how fiercely Pakistan pursues its strategic ties with Russia.

Pakistan's relationship with China is deep-rooted and based on mutual respect and cooperation. Both have a strategic partnership which includes transfer of civil-nuclear technology, joint manufacturing of aircrafts, and collaboration in Al-Zarrar MBTs. Pakistan, at this juncture, requires long-range surface-to-air missile capability to counter the Indian military's advanced UAVs, aircrafts and missiles. In addition, Pakistan can also negotiate the purchase of Chinese J-10 fighter jets. With this aircraft, it would be easier for Pakistan to engage Indian SU-30 MKI aircrafts at high altitude. In addition, close strategic ties between Pakistan and China, joint intelligence sharing, bilateral counterterrorism exercises and mutual cooperation in defence industry would be beneficial for Pakistan's overall war fighting skills to counter any threat emanating from India. The Chinese SAM system HQ-9 could be a big plus for Pakistan. Pakistan must kick start negotiations with Chinese counterparts for the early transfer of this advanced SAM system to safeguard its air space from any aerial threats.

The Indo-Israel defence cooperation may undermine Pakistan's strategic parity with India. The transfer of latest ABM technology by Israel and LR-SAMs may force Pakistan to increase the quality and quantity of its nuclear warheads, opt for second strike capability at sea or deep underground tunnels along with robust command and control structure to strengthen nuclear deterrence against India to counter any limited or total war in the region. Pakistan must improve its indigenous defence industry and improve its surveillance and recon capabilities, enhance the endurance and range of its armed UAVs and jointly work with China to achieve advancement in space.

The most important aspect of the Indo-Israel strategic partnership is the common threat perception. Both countries consider Pakistan a threat because it is the only Muslim country with nuclear weapons and a strong military force with greater outreach that can challenge both states. In addition, most of the militant groups in this region consider Israel and India as evil powers, hegemonic powers.

It is difficult for Pakistan to compete with India in the conventional arms race. Pakistan's fragile economy cannot take the burden of conventional arms procurement. In such a scenario, Pakistan would have no other option but to overwhelmingly rely on its nuclear deterrent to mitigate any threat to its existence emanating from the deepening Indo-Israel strategic alliance. This is the reason that Pakistan has introduced a policy of

full-spectrum deterrence and Nasr-IX tactical nuclear weapons to counter any misadventure under the Cold Start Doctrine (CSD) or any other proactive military operation by India.■