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ISRAEL'S Innovative Homeland Security Solutions

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In This Issue

Dear Friends,

Israel, much like India, has been suffering from various terrorist attacks against it since its inception. Israel's existence has been challenged right from the day it declared its independence in 1948 and it had to fight for its existence during a number of wars and face terrorist attacks against its people all over the world. This has forced Israel to place National Security very high on its agenda. Israel's policy of mandatory drafting and continuous attempts to achieve self reliance has been very significant as well. Almost all Israelis men as well as women serve in the army and become more aware of overall and specific security risks. Israel has been encouraging innovation and entrepreneurship which has made it a Start-Up Nation. The Israeli army is known for being tech savvy and innovative. Many security solutions originated in Israel were initially developed by the army, and then transferred later into civilian use by start-up companies, mainly composed of ex-members of its elite army units.

Various Israeli state and private entities are involved in the counter terrorism efforts, including government ministries (like the Prime Minister's office, Defense Ministry, Ministry of Foreign Affairs, Health Department, Home Ministry, Justice ministry, Finance ministry etc.), as well as other agencies, such as the Police, Intelligence bureaus, branches of the Military, Tax offices, Immigration Dept., Banks and other authorities.

Effective counter terrorism actions require close cooperation and coordination between like-minded countries, as well as between all these entities in each and every country. Lack of coordination is simply ineffective and leads to a waste of resources and to counterproductive competition between the agencies.

The nature of terrorist attacks has changed significantly in the past one decade. The recent terrorist attacks are perpetrated with great planning and precision and are directed against civilian places of economic and strategic importance. In recent years, it seems to be greater global public concern regarding daily security issues. At the same time, many private companies have developed a higher sense of security awareness, and are looking for professional homeland security experts to present them with solutions to protect their various business interests.

In recent years, Israel has emerged as a leading exporter of world class security systems and training methods. Israel is a leading innovator in the hi-tech sector and the Israeli army and security services are not an exception. Israel's HLS industry is made up of a combination of different advanced technologies, such as defense, telecommunications, software and medical industries. The key to the Israeli companies' success lies in their integration of several technologies, as opposed to presenting single technology solutions. Israeli companies excel in Critical Infrastructure Protection, offering unique capabilities in the areas of Physical Barriers and Fencing, Sensors, Intrusion Detection, Image Processing, Tracking and Motion Control, Observation, Access Control, Biometrics, Smart Cards, Anti-forgery, Commodity Protection, Surveillance, Crowd Control, Command and Control Rooms and more.

The current global trend of terrorism is yet another proof of the necessity of global cooperation to fight terrorism. This reality has forced Israel to develop special counter-terrorism expertise that we are now happy to share with friends around the world and of course in India. The cooperation and collaboration may be on a Government to Government level or on a Business to Business level. Many of the top Israeli HLS companies are already present in India, and are active in many sectors of the HLS industry. At the same time, we also learn a lot from the way India has been dealing with terrorist attacks against it, so it's a two-way cooperation between our two countries that has a huge potential to grow and develop.

One of Israel's famous generals once said, "Fighting terrorism is like boxing - you usually win by points." We should do our best together to make our world a safer place.

Orna Sagiv

Consul General of Israel, Mumbai

Please send any comments or suggestions to info@mumbai.mfa.gov.il

Dear Readers,

Greetings! This issue of Indo-Israel Business is focused on Homeland Security. Positioned at the forefront of today's homeland security technology, Israel has initiated and implemented state-of-the-art homeland security solutions based on expertise acquired over decades of combating internal security and terror threats. Israel's domestic security is largely self-reliant, depending mainly on home-grown defence and information technologies. Extending their leadership beyond Israel's borders, Israeli companies are positioned among the world's most creative innovators in almost every aspect of homeland security. Their fields of expertise include border protection and surveillance; virtual and physical perimeter protection systems for land-based and maritime sites; inspection systems for vehicle and cargo scanning at border crossings, airports, and seaports; countermeasures against potential terror attacks; IED/remote control bomb jammers; explosive ordnance disposal measures; ballistic armor protection; riot control solutions; non-lethal measures for law enforcement; and more. These advanced, technologies are also securing many of Israel's allies and partners throughout the world, employing unique operational concepts supported by effective training and support.

The cover story is a comprehensive look at Israeli Homeland Security. That apart, we have interesting articles on the latest hi-tech security gadgets and weapons made in Israel, and a look at the Top 10 Airport Security, as well as Video Surveillance, technologies that have made Israel the byword for homeland security innovations. The Private Security sector plays a major part in maintaining homeland security; this is uniquely an Israeli phenomenon, and we have a report on it. We also take an inside peek at Israeli intelligence. Israel's first Homeland Security Conference held recently was a great success, and we have a report on it. In India, the IFSEC exhibition, Homeland Security India 2010 that is on November 23-25, will feature many Israeli companies; we carry a short profile of each one of them. And not to forget, there is also a comprehensive look at the Indian Homeland Security sector. We hope you will enjoy what we have put together!

Satya Swaroop
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Israeli Homeland Security: An Overview

By Jonathan Tucker,
US Institute of Peace, Washington DC

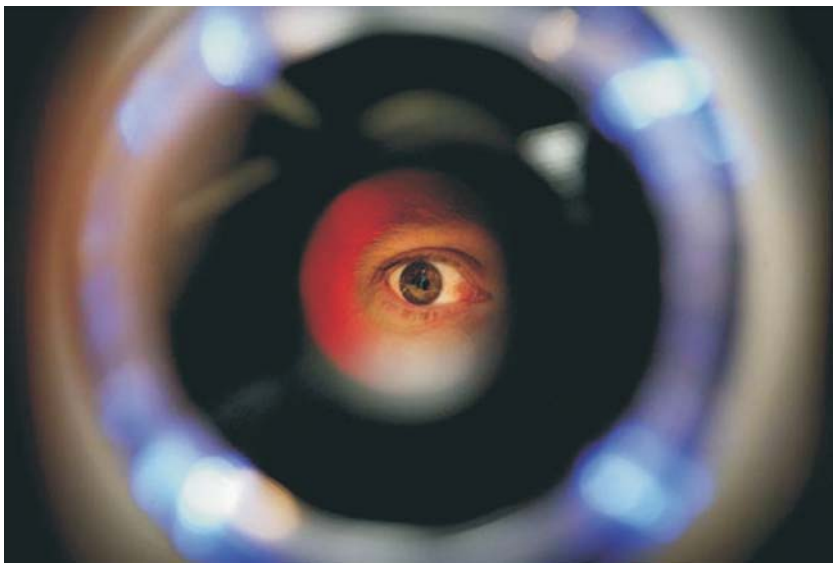
Ever since its founding in 1948, the state of Israel has faced the threat of terror attacks from rejectionist organizations such as the Popular Front for the Liberation of Palestine, Hamas, Palestinian Islamic Jihad, and Hizbollah. Because these groups cannot defeat the Israel Defense Forces (IDF) on the battlefield, they target Israeli citizens in an attempt to subvert the national will. According to Boaz Ganor, executive director of the International Policy Institute for Counter-Terrorism in Herzliyya, terrorist violence aims "to undermine the personal security of civilians, to sow fear and trepidation, and to sap public morale" in order to pressure decision makers to make political concessions.

Over the past 50 years, the Israeli government has developed a variety of measures towards effective homeland security. Israel has also made a virtue of necessity by creating a cutting-edge security industry that markets counterterrorism technologies, products, and services throughout the world. The primary goals of Israeli homeland security are to prevent terrorists from influencing the national agenda and preserve the psychological resilience of the civilian population. According to Maj. Gen. Uzi Dayan, chairman of the Israel National Security Council, the government's campaign against terror involves striking back against terrorist cells to protect the homeland, expanding the campaign against terrorist organizations and their state sponsors, and delegitimating terrorism internationally.

Israel's Experience With Terror

Israel has learned over the years that terrorism is a stubborn phenomenon and that, in contrast to conventional warfare, decisive victory over terrorism is rare. When countermeasures block one avenue of attack, terrorists often improvise some new means of inflicting damage. After a series of aircraft hijackings in the 1960s forced Israel to improve aviation security, terrorists began to target Israeli embassies overseas. When security at embassies was strengthened, terrorists responded by attacking markets, buses, and pedestrians in Israeli cities. Accordingly, counterterrorism strategies must continually adapt to and preferably anticipatechanging terrorist tactics. General Meir Dagan, head of the Bureau for Counterterrorism in the Israeli Prime Minister's Office, observes that "fighting terrorism is like boxingyou usually win by points."

Palestinian terrorism against Israel has escalated dramatically since the second intifada ("uprising") began in September 2000; it has included the use of mortars and Qassam II rockets (with a range of 4 to 6 miles) against Jewish settlements and military bases in the Gaza Strip and suicide bombings in crowded buses,



markets, restaurants, and nightclubs.

Israeli counterterrorism strategy comprises five elements:

1. Intelligence collection and analysis

2. Military and paramilitary operations to disrupt terrorist infrastructure

3. Commercial aviation security

4. Defense against chemical and biological attacks

5. Efforts to strengthen the psychological endurance of the civilian population

The Role of Intelligence

The vigilance of the Israeli public plays a key role in preventing terrorism. According to security experts, the average Israeli is highly aware of suspicious packages, individuals, and actions that could pose a threat to public safety and does not hesitate to notify the police. As a result, ordinary citizens foil more than 80% of attempted terrorist attacks in Israel, including time bombs left by terrorists.

Israeli experts contend that beyond a vigilant citizenry, intelligence is the essential foundation of any systematic effort to combat terrorism. According to Gen. Dagan, "Investments in intelligence are invisible, whereas increased security is visible but often wasteful. The first priority must be placed on intelligence, then on counterterrorism operations, and finally on defense and protection." To support its war on terrorism, Israel has developed a highly coordinated and efficient intelligence apparatus. Drawing on human and technical means, Israeli government agencies work continually to identify terrorist operatives and cells. Threats are categorized into those that appear imminent and require immediate attention, those that are less probable but could emerge later on, and those that are unlikely but still possible.

In contrast to the infamous rivalry between the CIA and the FBI, Israeli foreign and domestic intelligence agencies cooperate well in collecting and sharing terrorism-related information. The Israel Security Agency, known as Shin Bet, reports directly to the Prime Minister and is responsible for domestic intelligence, counterespionage, internal security, and the prevention of terrorist acts. The Arab Affairs Division of Shin Bet conducts political subversion and surveillance of Arab terrorists, while the Protection and Security Division safeguards Israeli government buildings and embassies, defense contractors, scientific installations, key industrial plants, and the national airline El Al. Israel also has a foreign intelligence agency, Mossad (Hebrew for "institute"), and a military intelligence service, Aman. Shin Bet works closely with Mossad and Aman to prepare an annual terrorism threat assessment for the Prime Minister.

Israeli government agencies gather human intelligence on terrorism by deploying undercover agents in the Palestinian-controlled areas and by recruiting local informants inside or close to terrorist organizations. Several factors may lead Palestinians to

collaborate with the Israeli authorities: cash incentives, non-monetary benefits such as a building permit or a cab license, and psychological factors such as a desire for revenge, ideology, or adventure. (Still, spying for Israel is extremely risky, and suspected collaborators are often executed or lynched by Palestinian mobs.) Israel also engages in frequent police operations in which large numbers of suspected Palestinian militants are rounded up and interrogated. Only rarely do such operations yield tactical warning of an imminent terrorist attack, however, and apparent tips obtained during interrogation may be disinformation designed to deflect attention from the real target.

In addition to human intelligence, Israel has developed sophisticated technologies for detecting explosives and arms at a distance, electronic eavesdropping and signals intelligence, and visual intelligence with unmanned aerial vehicles. Nevertheless, Israeli intelligence agencies give priority to human intelligence over high-tech methods and contend that the United States has placed too much emphasis on the latter at the

expense of the former. Although a satellite image can reveal the location of a terrorist training camp, it cannot provide insights into the thinking of operatives planning an attack.

Counterterrorism Operations

Israeli counterterrorism operations are designed to disrupt the "terrorist infrastructure" in the West Bank and Gaza by attacking bomb factories and safe houses, gathering intelligence, and arresting or killing key terrorist leaders and bombmakers. Several organizations and units are involved in such operations. Shin Bet detachments work with Aman undercover units to counter Palestinian terrorists, including the military wing of Hamas. In addition, an elite IDF commando unit called Sayeret Matkal is Israel's premier counterterrorism organization, the equivalent of Delta Force or the British SAS. The Hebrew word sayeret means "reconnaissance or commando force"; matkal is the Hebrew acronym for "general headquarters" and signifies that this unit is under the direct command of the Army chief of staff. Sayeret Matkal has been involved in almost every major counterterrorist operation conducted by Israel, as well as hostage rescue operations. More recently, the IDF and the Frontier Police, a military organization under police control, have created new counterterrorism units, including Duvdevan (Hebrew for "cherry") and Shimshon. The Israeli Police Force's Yamam professional antiterror unit, established in 1974, specializes in hostage rescue. Yamam operatives have the advantage of long experience, whereas the members of Sayeret Matkal and other IDF counterterrorism units do two years of basic training and then serve three years as commandos.

A major focus of Israeli counterterrorism operations is to prevent Palestinian terrorists from the West Bank from infiltrating Israel to stage attacks. Because recent suicide bombers do not fit a standard profile, they are difficult to identify and intercept in advance. Accordingly, Israel has sought to prevent suicide operations by disrupting them at the organizational, training, and planning stages, before the shahid ("martyr") is on his way to the target. IDF operations to eliminate the "terrorist infrastructure" are directed against the activists who recruit and train the suicide bombers, manufacture the explosive belts, gather operational intelligence, drive the shahid to the target, and otherwise provide logistical and moral support. Because terror organizations continually recruit new operatives and require a large network of supporters, aggressive counterterrorism campaigns can weaken the morale of the terrorists, hamper enlistment efforts, and deter collaborators. Military operations against terrorism also reassure the Israeli public that the initiative in the war against terror is on the side of the government.

Commercial Aviation Security

Israel's expertise in aviation security is legendary, and this area remains a top priority because the stakes are so high. Large passenger aircraft are attractive targets for terrorists because once in the air, they are extremely vulnerable. A small explosion that might kill only a few people on the ground can bring down a jumbo jet, killing hundreds. Such a disaster would also attract extensive media coverage, magnifying its psychological, political, and economic impact.

El Al, the Israeli national airline, has a security budget of roughly

$80 million, covering Ben Gurion International Airport near Tel Aviv and the airliners themselves. Terminal security has been a major concern for Israel since 1985, when Palestinian terrorists attacked the check-in counters at the airports in Rome and Vienna with guns and grenades, killing 18 people. Ben Gurion airport is protected by a defense in depth that begins with a checkpoint on the single access road, where armed guards examine vehicles and question suspicious-looking drivers or passengers. Additional plainclothes security officials monitor the entrances to the terminal, continually scan the crowds inside, and frequently check wastebaskets for explosive devices.

El Al's passenger screening system, established in the early 1970s, relies on psychological profiling techniques backed up with high-technology equipment. This system has been highly effective: the last successful hijacking of an El Al jet was in 1968, when Palestinian terrorists diverted a flight from Rome to Algiers. Whereas the United States gives priority to screening baggage rather than people, Israel's security model aims at ferreting out individuals with terrorist intentions. This profiling process relies on access to intelligence and careful observation of would-be passengers.

The main reason for Israel's primary emphasis on human factors is that advances in explosives technology have made it increasingly difficult to find bombs hidden in luggage. Plastic explosives can now be disguised in almost every conceivable form, including shoe soles, toys, cell phones, and clothing. Moreover, the 11 September terrorists did not carry guns or explosive devices but used small, easily concealed weapons (box-cutters) to hijack four airliners and transform them into flying bombs. Although scissors and box-cutters are now banned from carry-on bags, determined terrorists could employ seemingly benign objects, such as the stiletto heel of a woman's shoe or a man's belt, to seize control of an aircraft in flight.

Another threat to Israeli aviation derives from the possible terrorist use of shoulder-fired ground-to-air missiles, such as Stingers. Ben Gurion airport is situated only a few miles from the West Bank, so the threat of a missile attack is real. Because installing antimissile countermeasures on every plane would be prohibitively costly, Israel relies on enhanced perimeter security. Ground services such as cleaning, catering, and refueling also present potential vulnerabilities and necessitate the careful vetting of personnel. Shin Bet strives to remain one step ahead of the terrorist enemy, who may devise new tactics to circumvent the existing security systems. To this end, Israeli security specialists continually analyze "possible ways of action" for attacking passenger aircraft, collect operational information, and try to spot and correct weak links in the security system.

Defense Against Chemical and Biological Attacks

Another area of terrorism prevention in which Israel is a world leader is passive defenses against military or terrorist use of chemical and biological weapons. Not only do Israeli civilians face a direct threat of chemical or biological attack from countries such as Syria, Iraq, and Iran, but Palestinian terrorists have shown a growing interest in these weapons. In December 2001, the Israeli police revealed that a Hamas suicide bomber in Haifa had used an explosive

charge containing a toxic pesticide, although most of it was consumed in the explosion. Although the chemical warfare capabilities of Hamas are still rudimentary, Israeli security officials are concerned that the group appears determined to acquire or produce more advanced chemical agents. In May 2002, a Hamas agent, Abbas Sayed, was arrested and later acknowledged that he had obtained assistance from Hizbollah in attempting to produce cyanide and nerve gas.

In view of this threat, Israel has implemented the world's most sophisticated civil defense program against chemical and biological attack. In the mid-1980s, the Israeli government began to provide each citizen with a free kit consisting of an individually fitted gas mask and an auto-injector containing nerve-agent antidotes. Special masks are issued for infants, children, and individuals with respiratory problems. The IDF's Home Front Command (Pekood ha-Orref operates a nationwide network of distribution centers, including a computerized record of everyone who has received a kit and the date of issue. Notices are mailed out reminding citizens to replace the mask, air filter, and auto-injector when the equipment's operational life has expired.

During the 1991 Persian Gulf War, when Iraqi President Saddam Hussein threatened Israel with a chemical attack, the IDF developed the doctrine of "a sealed body in a sealed room." Each household was instructed to prepare a special shelter against chemical or biological attack: an interior room that has few if any windows and can be sealed with plastic sheeting and tape to render it airtight. In response to air-raid sirens, warnings broadcast on radio and TV, or the sound of a nearby explosion, Israeli citizens were told to enter the special room, seal the door with tape or cloth, don their gas masks (creating the "sealed body"), and keep them on until the "all clear" is given.

Since 1992, the government of Israel has required all newly constructed public buildings, apartment complexes, and single-family homes to incorporate a "protective room" that is both bomb-resistant and capable of being sealed airtight. Most protective rooms are equipped with electricity and a telephone hookup; the more elaborate ones have water, a bathroom, and a TV connection. Another lesson of the Gulf War was that not everyone could hear the air-raid sirens. To address this problem, Israeli citizens were told to turn on the radio before going to sleep and tune it to a special station that broadcast only static. In the event of a chemical attack, the station would commence a live broadcast to wake people and tell them to enter the sealed room. Israeli public health authorities are also aware of the threat of bioterrorism and have stockpiled vaccines and antibiotics.

Strengthening Psychological Coping Skills

The Israeli government has made a deliberate effort to counter the demoralizing effects of terrorism by strengthening the psychological coping skills of ordinary citizens. Terrorists seek to invoke a pervasive fear in the civilian population by personalizing the threat so that everyone feels vulnerable, regardless of the statistical probability that a given individual will be affected. In an effort to counter this form of psychological warfare, Israeli terrorism experts from the International Policy Institute for Counter-Terrorism visit schools throughout the country and provide educational programs tailored to students of different age groups. These lectures describe the motives and operational strategy of terrorists, with the aim of immunizing students against the personalization of terror. According to institute executive director Ganor, "Education directed towards familiarity with the phenomenon [of terrorism], in all its aspects, will lower the level of anxiety and foil one of the terrorists' principal aims: to instill fear and undermine the personal security of civilians." ■

Hi-Tech Weapons: Made in Israel!

By Susan Karlin, Forbes Magazine

Israel, by necessity, has become the hotbed for counterterrorism research. Innovating well out of proportion to its size, Israel has spawned companies selling guns that shoot around corners, software that translates dog barks into English-language warnings and lasers that can detect explosives from 100 feet away. Working their way through labs now are intelligent robotic cameras, and nanolasers and nuclear resonance imagers to detect chemical and bioweapons.

"Much of the homeland security technology in the U.S. is 20 years old. It is unsuitable because the nature of the threat has changed," says Dan Inbar, the Israeli founder of the Homeland Security Research Corp., a Washington, D.C. Consultancy.

Israeli exports of homeland security equipment will hit $300 million this year, up 22% per year since 2002, estimates Inbar. The global trade in antiterror gear and consulting services is expected to grow from $46 billion to $178 billion by 2015. (The U.S. accounts for half.)

Here are some of the hi-tech counter-terrorist gadgets that have been developed, or are in the final stages of being developed, by Isreali companies:

The Corner shot

Urban warfare means fighting in tight quarters, but a rifle-toting soldier can't shoot around walls, under cars or through an overhead window without sticking his head into harm's way. Problem solved: Corner Shot, an attachment for automatic weapons, handguns and grenade launchers, swivels 63 degrees to each side of the barrel. Ammo is stored in the attachment. A video camera in the front sends an image of the target back to a monitor near the trigger. Unveiled by Corner Shot Holdings in 2003, the device has been sold in more than 15 countries, including the U.S.

X-Ray Vision

Superman has it. Now humans can, too. Camero's portable radar device uses ultrawideband radio frequency to penetrate almost any kind of wall and capture high-resolution, 3-D moving images of what's behind it. No longer do rescuers and soldiers fearing an ambush have to drill holes and insert fiber-optic cameras or depend on fuzzy images from sonarlike sound amplifiers. The Camero device picks up reflected signals from as far away as 20 meters to produce images of the physical objects in the signals' return path. Motorola is an investor.

The Invisible Fence

Attendees at the 2004 Olympics in Athens were watched--and monitored--by cameras enhanced with artificial intelligence, made by Controp Precision Technologies. The cameras can distinguish humans

from other moving objects and lock on their subjects, day or night. Guards will get an alert and can switch to manual mode and zoom in on the target. U.S. troops are using Controp cameras in Afghanistan. Just out is a 1.5-pound wireless version for mounting onto unmanned air vehicles and balloons during reconnaissance missions.

Bomb Jammer

Like a Swiss Army knife of electronic warfare, the C-Guard from Netline Communications

Technologies in Tel Aviv can jam indoor cordless phones, cellular phones and satellite phones, as well as VHF, UHF and GPS signals, but leave the military radio spectrum alone. Can also be used to thwart bombs detonated remotely by seemingly dormant cell phones. Clients include NATO and the U.S. Military.

Forgery Finder

The Smart Document Reader from I-SEC Technologies claims a 97% accuracy rate at spotting forged passports and 90% for other ID cards. Documents are simultaneously scanned with visible, ultraviolet and infrared light to check for hidden watermarks. These high-res scans can be checked against official versions stored in a database to make sure things like expiration dates conform. In use in big airports in Europe, Africa and the Middle East. Successfully tested at the Newark, N.J. Airport.

Explosives Detectors

The Sensobot from Laser Detect Systems Ltd. can detect and identify common explosives from 150 feet away by picking up the spectral fingerprint of bomb materials, even traces left on a person working in a bomb factory. The Peroxide Explosive Tester, or PET, developed at Israel's Technion Institute, is a $30 disposable device the size of a pen that detects bomb materials from the peroxide family, which are cheap to get and hard to spot. It releases a mixture of three chemicals that turn green when they encounter such improvised explosives.

Liar Detector

An airport security guard's greatest fear is letting through terrorists smart enough to stay off the watch list. Suspect Detection Systems came up with a machine to smoke them out. A passenger puts his passport on a scanner and one hand on a sensor. The machine starts asking increasingly tough questions in the official language of the passport-issuing country. Artificial intelligence software monitors physiological responses through the sensor. Agents pull aside those who fail the test. The company claims a 96% accuracy rate after two years of testing.

Dog Translator

Worn on a collar or mounted on a wall, the Dog Bio Security System translates barking into alarms for police or military. Bio-Sense Technologies spent two years capturing the sound waves of woofs and arfs, encoding them to be read by a digital signal processor. All dogs emit the same type of bark when they sense trouble. The device can distinguish this bark from a dog's "Hello." A consumer version costs $100. A high-end version costs tens of thousands of dollars but is still 25% the cost of video surveillance. ■

Israel's Top 10 Airport Security Innovations

By Karin Kloosterman

In the mid-1970s the New Yorker ran a cartoon showing a harried air hostess pushing a food cart down the aisle of a crowded passenger plane flying to Tel Aviv. One of the passengers, dressed in traditional Arab robe and head gear, pulls a gun and aims it at the hostess. The hostess, without missing a beat, continues to push the food cart past the gun-wielding passenger, and as she passes by him, matter-of-factly, says: "This plane is already hijacked."

Since the foiled Christmas Day attempt on a Detroit-bound plane, airport authorities around the world are in a race to find novel solutions to fight terror. The strategies and technical tactics Israel has adopted feature high on their lists. Rafi Sela, a top security consultant and former chief security officer at the Israel Airport Authority, explains that there are reasons why Israel's Ben Gurion Airport has been kept terror free. "Israel concentrates on the passengers and not their luggage so we have a real edge over the rest of the world in protecting travelers," he says. "This is in addition to us protecting the whole airport, while the others merely try to achieve aviation security," he added.

Sela advises governments and airport authorities all over the world. He has become the leading figure advocating Israel's unique approach to airport security in the past six years. Through his company AR Challenges, he uses approaches and technology services rooted in Israeli innovation to try to help his clients stay one-step ahead of potential terrorists. The global transportation security consultancy, of which he is president, works with high profile clients including Canada's RCMP, the U.S. Navy Seals, and airports around the world.

Making use of homegrown technologies, some of them developed by whiz-kids in the Israel Defense Forces (IDF) Intelligence Corps 8200 army unit, Sela believes that Israel's strength in airport security is because it boasts near-invisible

protective "rings" of security around the airport and passengers.

Most airports around the world often lack measures as basic as video surveillance, he explains. "The airports are so concentrated on finding your bottles of water and perfumes that they don't even look at you," says Sela. "The security personnel forget that they are in the business of looking for terrorists." At Ben Gurion Airport you can take a coffee on board. According to Sela, airport security personnel do not care what you take on the plane. "The security in Israel checks you as a passenger, and not the luggage. If you are cleared as a person then who cares what you bring on the plane with you?"

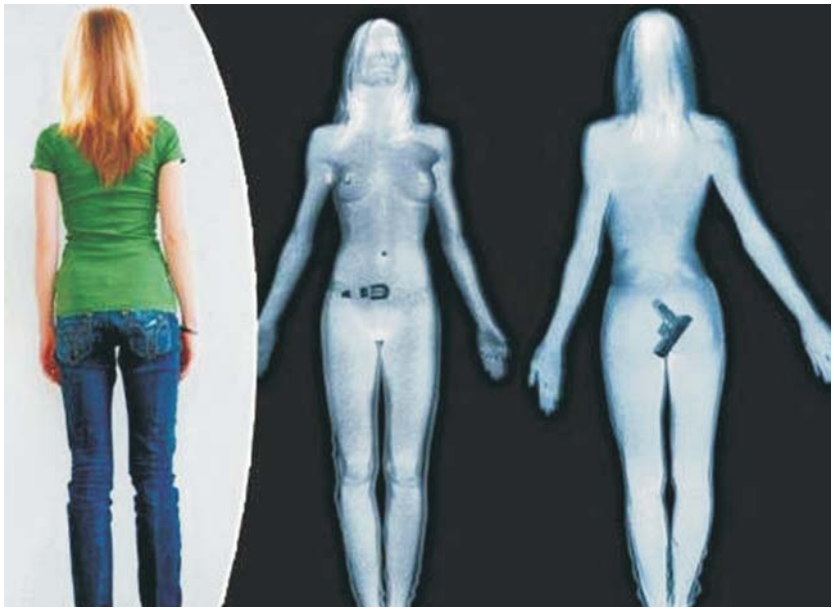
Here is a compilation of the top 10 Israeli technologies to keep airports safe.

1. Trace-Safe - *an alternative to body scans*

The U.S. Transportation Security Administration will place 950 full-body scanners at U.S. airports by the end of 2011. Many worry about the health ramifications of the radiation some of these scanners emit, while other are worried about privacy issues. An Israeli company working with a U.S. partner may have the solution.

Trace-Safe from Israel and Raptor from the United States have co-developed a chemical process, called Traceguard, which can free particles from fabric and luggage for speedy detection and analysis.

The technology detects harmful substances and not benign ones



like perfume or pharmaceuticals. It does not show false alarms, does not need filters or a cleaning. "You only want to detect the substances that you can make explosives or biological agents out of," says Sela.

It can be integrated into scanners and magnetometers and also into a wand that can be passed over both people and luggage.

While Trace-Safe is struggling financially right now, Sela believes that TraceGuard has the potential to bring an end to the use of all other equipment at airports, including the detested body and shoe scanners. "I am among those experts who believe the full body scans are wrong and not healthy for people," Sela said. "Especially since they are passing through radiation; it defeats the cause."

2. Suspect Detection System - *tracing the sweat of terror*

Suspect Detection System (SDS) is an automated interrogation and background check technology for both travelers and airport employees. It is like a polygraph machine for catching terrorists an advanced and automated filtering tool that can identify potential suspects from among tens of thousands of people.

With human selectors and security personnel there is always the danger of introducing human error into the security check. SDS's VR-1000 has been built with the assumption that very sophisticated terrorists may not be on the wanted lists of Interpol police or DHS.

The technology works as a lie detector to monitor the psychological and physiological fear of a terror suspect and to assuage Americans' fears of being "profiled." The test works like a robot, searching for cues that only terror suspects are likely to radiate.

3. BellSecure - *consolidating data*

BellSecure is an Israeli security company that is so high up on the security chain, that it is impossible to locate its Web site. The new

security platform, according to Sela, facilitates real time communication and alerts for both travelers and cargo. The start-up company developed by three Israeli entrepreneurs is now being promoted in both Israel and Canada.

Created by former soldiers in the prestigious 8200 IDF Intelligence Corp group, the platform provides the missing link between the identification and verification of people and cargo at the airport with local and worldwide authorities. With many systems in different countries, most of which are incompatible, the BellSecure solution can help to identity a secure and reliable no-fly list that derives data in real time from a multitude of sources.

Sela says that it manages security in a way that the $14 billion system bought by U.S. security officials will never do. Currently looking for a pilot airport for a test run, BellSecure connects DHS, Interpol data, pictures, voice, and video to create a unified database that can be managed worldwide.

4. Smart Camera Systems - *watching the cameras*

With Israeli-made Smart Camera Systems there is no need to hire hundreds of security personnel to watch endless, mostly boring video with their own human eyes. Smart Camera Systems, a software-activated video and surveillance system, monitors and profiles "suspicious" passengers and employees and sends real-time alerts to officials monitoring the airport floor.

The company's premiere product, WebVR, is a platform designed to intelligently manage, store, and distribute video content over various IP networks. Using it, security staff can see and review recorded and live footage captured by IP, web and analog cameras over a PC, a mobile phone or a PDA.

5. Eltel - *monitoring the monitors*

Eltel, a subsidiary of Elul Group, provides logistics support to Israeli armed forces and government agencies. Eltel has developed a "smart" computerized training system that helps airport personnel deal swiftly and competently with security risks. This is a unified training system.

"This company owns a very unique competency program, which it can verify at the scanners as to how well a security person is performing," explains Sela. "You need to know they feel and how well they are doing when they are monitoring scans. This company provides a continuous competency check program. Nobody else in the world has it. Not only could it help tell managers when staff need a break to rest their eyes, it could create standards on how security personnel are managed and monitored," he predicts. The training system not only provides reports, but monitors those standards on a continuous basis.

6. WeCU - *here is looking at you*

WeCU aims to blend high-tech with psychology. It presents symbols and images that only certain terror operatives will "see." Imagine suddenly seeing a picture of your mother projected on an airport wall. This is the idea behind WeCU, which collects unusual responses to its images to trace and foil suspects.

Sela likes the idea, but he foresees that some governments, such as Canada's, may take issue with this particular technology that smacks of Big Brother. "This company has an algorithm that in some countries would be viewed as an invasion of privacy Canada will never install it. I've told Canada that you can't do security with political correctness. As long as you are doing it without a real plan, it will never work."

If one could combine SDS with WeCU, this approach of profiling terrorists would not be so bluntly viewed as an invasion, suggests Sela.

7. *Bust the security line with your own "Biometric VIP" card*

Frequent flyers will be happy to know that these biometric cards being issued in Israel by the Airports Authority could make flights easier and safer the world over. No one wants to arrive hours before a flight and have to contend with unpredictable periods of waiting in line.

The biometric scanners are cards similar in size to credit cards that contain personal, biometric information about each traveler. Perhaps in the future they will be linked to international frequent flyer schemes. You will have to wait a little longer though, since for now they are only being distributed to El Al's business class passengers as a pilot test.

Sela likes the idea, but says this particular company would need a solution like BellSecure's to authorize the check.

8. MagShoe - *keep your shoes on*

While numerous Israeli airport security technologies in use around the world are undetectable to the naked eye, many American travelers are already familiar with MagShoe. Instead of the sometimes embarrassing and always inconvenient procedure of removing one's shoes for airport security checks. The Israeli-made MagShoe lets travelers simply step up to be checked, and the device needs only a few seconds to scan for concealed weapons.

If use of TraceGuard's system becomes widespread, the MagShoe will become obsolete, says Sela. MagShoe, however, is still very effective for tracing objects hidden around the ankle area. Find it beside scanners and x-ray machines across America.

9. Vigilant - *sleeping with one eye open*

Vigilant's surveillance systems stay awake even if security personnel fall asleep. The Tel Aviv-based company, working with the Pelco company in California, has high-end installations already in place at various U.S. locations, including the George Bush Intercontinental Airport in Houston, Texas, and the Salt Lake City International Airport in Utah.

The intelligent digital monitoring system improves crime and terror prevention, not only in airports but also on American streets, like in Manhattan for example, one of dozens of locations which is hooked up to Vigilant's digital monitoring system. The company's Video Surveillance Center is a fully digital management solution that provides a surveillance wall. It is a turnkey solution for any surveillance center, airports included, that also includes a video motion detector.

10. Briefcam - *step back in time*

This Israeli company provides a video synopsis technology that allows security personnel quickly and effectively to review and index surveillance footage. Briefcam helps to identify individuals at border crossings, at airports, or in and around power plants. Since fewer people are needed to review footage, the potential for human error is drastically reduced, as is the manpower needed to track events and uncover unusual occurrences.

While Sela likes this technology, he says airports going for video surveillance options might prefer the Canadian-Israeli company Visual Defense. Based on technology from the 8200 army unit, Visual Defense can watch thousands of cameras at the same time. It's the only solution used in the subway in New York City in all underground stations. If airports decide to start using video surveillance, this would be the camera management company to use, Sela suggests. ■

First Israeli Homeland Security Conference Generates US$400 m

An al-Qaeda mail terror-bombing plot out of Yemen, American warnings about potential bombings in Europe, and ramped-up security measures at air and sea ports worldwide brought together security officials from dozens of countries for Israel's first-ever homeland security conference held 31 October-3 November, 2010 in Tel Aviv.

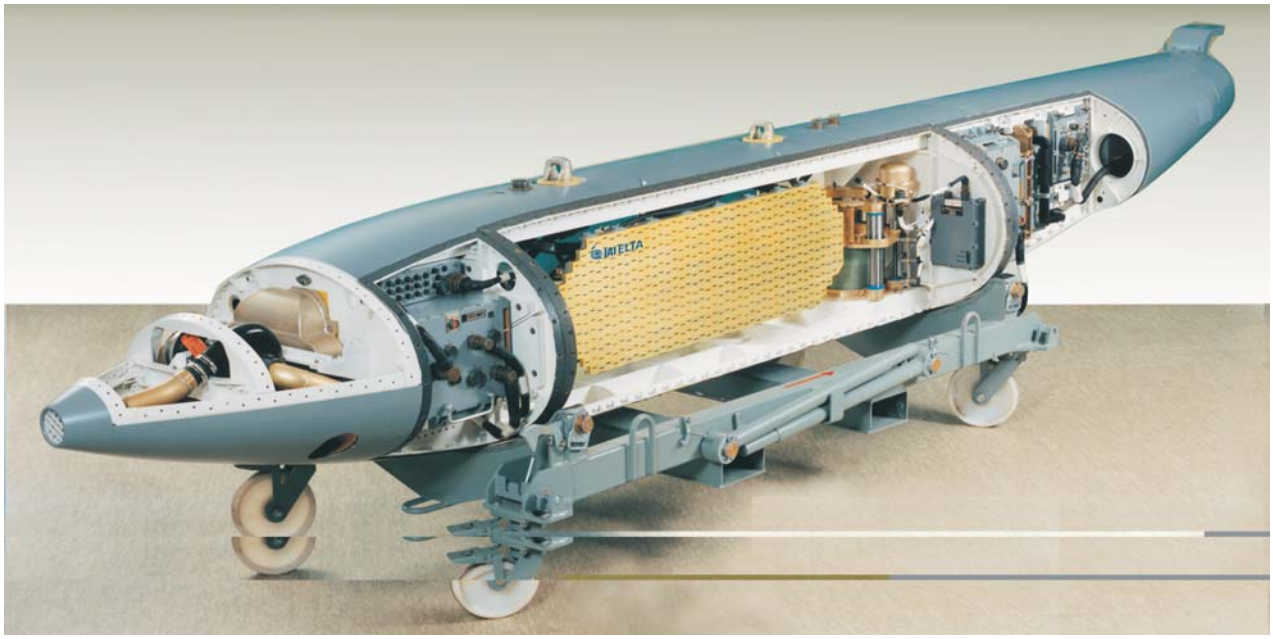
"Israel is known around the world as a country which develops advanced technology for dealing with terror threats to airports, train systems and other means of transportation," Mr. Benjamin (Fuad) Ben Eliezer, Minister of Industry, Trade and Labor, State of Israel, told more than 1,400 delegates. And those shiny, cutting-edge tools and latest information on the threats out there were shared by several dozen high-level speakers, and on display by vendors showing off their anti- terrorism and homeland security wares at the three-day event.

"Israel's security forces have succeeded in dealing with two main waves of terrorism, and prevented 120 suicide bombing attacks, " Israel Security Agency (ISA) chief Yuval Diskin told the security and government professionals gathered from countries as far apart as Brazil and Chile in South American, the U.S. and Panama, the U.K., India, and Thailand.

Diskin, however, said that the real-world successes were now matched by the threats developing in a cyberspace. "The new technological developments give everyone instant availability. Most unfortunately, the same technologies that enable astonishing jumps in communications, world economics, and social networks also enable the terrorist organizations to upgrade their capabilities," Diskin said. "We can fight these capabilities, and even win -- but to do so, there must be a new, globally-integrated international strategy," Diskin said. "We must share the great amounts of knowledge that the various countries have amassed, and we must cooperate in intelligence, developing technologies, high-level operations, and a legal framework that will allow the democratic countries the means to fight terrorism."

"The idea of this conference is very important, because Israel is leading in many dimensions of counter-terrorism, both in technology and in intelligence," Maj.-Gen. (ret.) Giora Eiland said. "Those who come here have a very good chance to hear Israeli lessons, and to be exposed to very advanced Israeli technology." Eiland is the former national security adviser, and worked with the prime minister's office on security and foreign affairs issues.

Wolf Tombe, Chief Technology Officer at U.S. Customs & Border Protection at the Department of



Homeland Security, said he was keen to learn some of the lessons. Tombe said his office was dealing with "systems that were never designed to be up 24/7," due to multiplying terror threats. "They were never designed to handle the workload we're handling today. We've had to constantly adapt to the evolving threat of terrorism; the systems are completely overstressed. So again, another reason to look for innovation," Tombe said.

Brazil, which will have its hands full hosting the World Military Games next year, the 2014 World Cup, is particularly interested in Israeli security innovations, notably, systems integration. "That's the key word for us being successful in this major event," according to Luiz Krau, a Rio de Janeiro-based security consultant for the Military Games. Krau made his comments before a flashy multimedia display by a major Israeli vendor that touted a turnkey system that used artificial intelligence to automatically sift through and "understand" terabytes of data, including text, images, audio and databases to foil terror plots.

Scott Alswang, a former Secret Service agent in the Bush Administration, and who is now a senior vice-president of a New Jersey-based physical security firm, found that, as the saying goes, "necessity is the mother of invention," as far as Israeli ability to meet security needs. "Judging by the past, the wars, the conflict, the suicide bombings, [the Israelis] have had to develop technology to counteract what's gone on with suicide bombers," Alswang said, adding that he'd like to keep in touch with some of the vendors and experts he met with at the conference, in order to "expand our capabilities in a number of fields, whether it's my old outfit, the U.S. Secret Service or my current company."

Conference officials said that the three-day event was a great success, which had over 600 participants, including 250 senior security experts. Deals after an estimated 800 meetings could amount to more than US$ 400 million, according to the Globes business newspaper. The Tel-Aviv event was the brainchild of the Israel Export and International Cooperation Institute. Director-General Avi Hefetz said his organization, buoyed by the success of the first-ever session, is planning a larger conference to be held annually.

One winner at the conference was Israeli aerospace industries. Their Elta division signed a US$ 9 million deal to sell a motion-detection border-security radar system to an unnamed foreign customer. Other industry leaders, such as Elbit, Rafael and dozens of smaller vendors, also offered hardware and software solutions to bomb-detection and related security equipment, and artificial - intelligence-boosted software capable of sifting through immense amounts of multimedia data to thwart attacks. ■

Private Sector Key to Homeland Security

By Mirza David and Shane Goodson,
International Security Academy, Israel

During the years 2001-2004 Israel faced a dramatic increase in suicide terror attacks in public areas (as many as 10-12 events monthly). Since 2005 there has been a massive reduction such terror on the cities' streets of Israel and its roots have been mitigated and rolled back on a very large scale. Let us look at how Israel has managed to cope with and counter this terrible threat and analyse in particular one of the key factors in this fight, the role of private security organs in the greater security system.

Among the reasons for Israel's tremendous ability to cope with such daily threats, we can identify four main traits which have strengthened our resilience in the face of the unrelenting terror and violence that has plagued us for so long. Firstly is the presence of a strong leadership which has shown in the past that it can put aside differences to steer the nation and give them strength when the security of the nation as a whole is at risk. Secondly the Israeli homeland security apparatus (Police, Military and Other Security Services) is well trained and well equipped to deal with contemporary threats quickly and effectively. Thirdly is the civilian population itself. Israeli citizens have all done military service and their level of preparedness aided in quick and effective response to acts of violence, minimizing their effect, aiding in recovery afterwards and even contributing to outright prevention. Their support for the leadership's solutions enabled us all to find the strength to withstand and overcome terror and violence

at its worst. The fourth factor is the presence of a very involved and dynamic private security sector that fills in the gaps where the government cannot and contribute to completing a solid and steady line against threats to the Israeli public.

We will now expand on this somewhat unique involvement of the private sector in homeland security. Because of the situation in Israel there are many private security companies especially because security is required for any place in which large groups of people may gather. This security needs to cope not only with the traditional petty crime that their counterparts outside of Israel have to but also with the threat of terrorism in its various forms and even attacks on the home front during a war. Serious terrorist attacks have often been thwarted not by police or Special Forces but by an observant security guard on the ground.

In order to act effectively the relationship between private security companies and the government has had to become very open and very mutually inclusive. Private security companies are informed by police intelligence briefs of potential threats, all private security training is government regulated, government emergency and natural disaster plans are designed to factor in the private companies and their employees. A good example can be the recent Homeland Security drill held in Israel where the entire country underwent a simulated ballistic missile attack. Private security guards evacuated civilians from public areas, coordinated rescue services and police forces as well as worked under them when the situation called for it.

Cooperation between private security companies and government security entities can be a great asset to the function of both as well as being able to provide better protection for human life which is essentially the greatest goal for all to strive towards.

Governments and private security companies in other countries should be encouraged to enter such a beneficial relationship and do away with much of the antagonism and perceived competition that exists between them. As we experienced here the correct balance of roles is a result of much trial and error; but a commitment by both sides will ensure a better living environment for all and a more effective counter to those who choose to threaten the tranquillity of that environment. ■

Video Surveillance Systems from Israel

By David Shamah

The attempted bombing in New York's Times Square highlighted, if such highlighting was necessary, the significance of video surveillance systems. Within hours of the car being discovered, police had used surveillance camera footage in a nearby shop to identify a suspicious looking man seen near the vehicle.

In the London bombings in July 2005, in which fifty-two were killed and 700 wounded, police officials, using dozens of surveillance cameras placed on the streets and in railway and tube stations, were able to trace almost the entire journey of the four bombers as they prepared for the attacks.

For crime too, police today turns to surveillance cameras to try to discover what took place. It is no surprise that Israel is a world leader in this field. With its ongoing national security problems, the country relies heavily on advanced video security technology to keep Israelis safe. Using expertise gleaned from the Israel Defense Force, Israeli companies have moved quickly into the field, responding first to the needs of the local market, and then using this as a base to access the rest of the world.

Today, Israeli video security companies provide some of the most advanced solutions in the world, selling to law enforcement and military authorities in Europe, the United States, and Asia. The most common innovation these companies share: smart video surveillance systems that not only observe, but also analyze, alert, and make security personnel more effective. Here is a list of the top Israeli video security systems.

MATE Intelligent Video

Mate's video analytics system can detect changes in the landscape. One of the biggest problems facing security organizations is worker boredom. Monitoring large banks of monitors hour after hour has a debilitating effect on the people doing the observing, and that fatigue can be exploited by those bent on breaching security.

In addition to fatigue, continuity of observation is an important issue. When guards change shifts, continuity is lost, so that terrorists, if they time it right, could place a bomb hidden in a bush next to an electrical plant or in the path of a security patrol. The bush would look as if it belonged there, and no one would realize anything was out of place until it was too late.

To combat these two problems, MATE developed a video analytics system that can detect changes in surroundings and landscape, indicating whether anything has changed in a camera's field of observation such as if someone or something appearing that had not been there before. When such unauthorized changes are detected, the system alerts security personnel, pinpointing the problem and allowing them to deal efficiently with the situation

before it gets out of hand.

MATE's technology can be used for anything from detecting suspicious activities or behavior to counting people and cars, tracking objects, or even detecting tailgating or piggybacking through access-controlled doors.

Adaptive Imaging

The devil, as they say, is in the details but most video surveillance systems are weak on picking up small details in images in real time. Security personnel watching a situation develop are often missing crucial information such as whether a potential subject is holding a weapon. Arresting an individual before the time is right could compromise an investigation months in the making or sow unnecessary and economically damaging panic.

To keep track of the details, security agencies can use a unique "panoramic telescope" developed by Yokneam-based Adaptive Imaging Technologies. The company won the Most Promising Startup award at last year's Global Security Challenge, and has received a grant from the U.S. Department of Defense. It has developed a camera with a full gigapixel (1,000 megapixels) of raw resolution. With its telescopic lens, the camera can take in a very wide field, one which would usually require a much larger number of individual cameras.

Thanks to the innovative software that accompanies the camera, security personnel can focus in on a target and receive a remarkably clear picture, de-emphasizing less critical parts of a scene. The result: security personnel can zoom in on the important details, giving authorities the information they need to deal with a crisis as effectively as possible.

Vigilant Systems

Vigilant offers a turnkey networked video management solution. After 9/11, installing and managing video surveillance systems became a priority for city, regional, and national governments around the world. While many solutions were already on the market, managers and government officials needed a system they could deploy quickly and efficiently, that would also supply the necessary recording, analysis, and storage capabilities and all this in a framework that would allow maximum flexibility and be able to integrate existing equipment.

Many managers, especially in the United States and the United Kingdom, found that Israel's Vigilant Systems could supply those solutions. Vigilant specializes in turnkey networked video management and recording solutions, streaming high quality images over robust wireless networks, and recording them for analysis.

Video from a wide variety of cameras is streamed to a single control room, where security personnel can keep an eye on a wide area, with the ability to focus in on detailed scenarios in high resolution.

Vigilant's solutions have been installed in dozens of city centers and shopping malls in the United States and the United Kingdom where there are more video surveillance cameras per head than anywhere in the world, with managers saying that the systems have been integral elements in ensuring or restoring safety.

Briefcam

Twenty-four hours reduced to a few minutes. Cameras are everywhere these days but what happens to the footage they record? Often nothing happens, because there is no one to sit and sift through the endless hours of video. It is usually only after a major disaster or attack that officials check the video, hoping to get clues as to whom or what caused the problem.

Briefcam's solution is its Video Synopsis product. Instead of watching the entire video, a viewer can see a synopsis with the

option of focusing in on objects or people of interest from a 24-hour period within a few minutes.

If viewers notice something odd in the behavior of an individual, they can focus in on that individual, and receive an index of all his or her movements in the entire range of footage. With Briefcam VS, security personnel have a more efficient way to watch and analyze footage, making it more likely that they will catch problems before they occur.

Sea-Eye Underwater Technology

Not all dangers are visible to the roving camera's eye; some are hidden away, underwater. Israel has experienced several attacks at the hands of scuba-diving terrorists, and underwater pipes and other installations may also be at risk. Cameras would be useful as aids in underwater security, but the limitations on video in underwater situations transmission of very low-resolution pictures via cameras that have to be tethered to a ship console make underwater video impractical for security purposes Shamah writes that the underwater video system perfected by Sea-Eye aims to overcome previous limitations by combining new advances in signal processing and video compression. A featured part of the system is a modem that allows data transmission at rates that are much more robust than in most other systems. In addition, Sea-Eye has developed algorithms to cope with underwater signal transmission problems such as multi-path reflection and Doppler effects, enabling streaming video or voice broadcasting to proceed unimpeded. The result - clearer underwater pictures with more detail - granting security services better tools to protect underwater installations.

Agent VI

Large facilities like airports, shopping malls, or stadiums are nowadays equipped with cameras that allow security personnel to view nearly every square inch of the facility. What is it, though, that security personnel are seeing? How can they differentiate between individuals or groups out for good clean fun, and those with crime or terrorism on their minds?

One innovative way is by using the video analytics system developed by Agent VI (formerly Aspectus), with research facilities in Rosh Ha'ayin, in central Israel. The company's VI-System compares video to a database of behavior patterns. When a pattern is detected that indicates trouble, an alarm is sounded, alerting personnel.

The alarms could be set off by images ranging from someone dropping a gym bag in the corner of a busy downtown intersection, to someone reaching behind an unattended jewelry counter in a department store. Those guys are likely up to no good and with Agent VI's technology, the chances that security personnel can nip a crime or attack in the bud are greatly improved.

Magal Security Systems

Some of the softest, most vulnerable targets for terrorists are the ones where they can operate uninterrupted and unobserved. Take a reservoir, for example a body of water that sits relatively unattended and unprotected (except for a perimeter fence), but upon which millions of people depend. Even placing a battalion of soldiers there would not necessarily be sufficient to protect such a large facility not that

governments can afford to allocate those kinds of resources anyway.

One solution that has proven successful has been perimeter detection, a specialty of Magal Systems, based in Yehud in central Israel. Magal is one of the largest outdoor, major-installation security companies in the world, with offices in dozens of countries, which claims 40 percent of the worldwide market for Perimeter Intrusion Detection Systems.

Using a range of tools from video cameras to lasers to microwave sensors and more all controlled by automated software that can instantly alert those in charge, Magal is keeping safe thousands of sensitive sites and tens of millions of people.

NICE Systems

To be effective, a surveillance system has to be nimble. At large facilities, security personnel must watch out for numerous threats, and any system that can ferret out the unnecessary information, delivering only the required data, is most welcome.

NICE System says that this is one of the strengths of its NiceVision technology. Along with a robust network that can deliver high-quality images and simplified, unified management capabilities, NiceVision also features distributed video analysis, which streams video only when an event is detected. This ensures that security personnel see what they need to see, while allowing them the flexibility of dealing with tasks other than observing video feeds.

Currently, NiceVision solutions record, analyze, and manage video data from over 200,000 cameras deployed around the world, at airports, highways, railways, hotels, cruise lines, public facilities, schools and many other sites.

Camero

While security cameras both stationary and roving are useful in observing open areas and perimeters, they are far less useful in urban settings. Buildings and other large objects abound, providing terrorists or criminals with the cover they seek to avoid authorities and stay out of view of cameras.

Camero, with R&D facilities in central Israel in Kfar Netter, has developed a unique camera that can "see" through walls, that denies the bad guys the advantages provided by urban environments.

The Camero Xaver system uses 3D image reconstruction algorithms in conjunction with sophisticated, patented signal processing techniques and a unique proprietary Ultra-Wideband (UWB) sensor design with extremely high bandwidth and a very high dynamic range.

The result is an ability to generate 3D images of objects concealed by solid barriers such as walls, made from a variety of known materials including ement, plaster, bricks, concrete and wood. With the system set to receive FCC (U.S. Federal Communications Commission) certification this year, Camero will be ready to install systems throughout the US in the coming months.

Bynet

In an enclosed area, cameras using some of the technologies outlined above can be used to effectively stop and catch suspects. What if the suspect gets into a vehicle? At that point, cameras can no longer track the suspect, and important information that could help defuse the situation is lost.

The problem can be countered with the high-resolution mobile video surveillance system from Bynet, Israel's largest hardware, software, and technology integrator. Along with advances in video surveillance, Bynet partners have developed technology that enables the company to offer a unique solution for border patrols, police and other law enforcement agents.

The central feature of the technology is a communication system capable of transmitting live, real-time video, data and voice communications via a single broadband connection, using a fast, secure, private network.

The key to the system is the high-speed wireless network, which allows fast transmission of high-resolution video and audio without any effort required on the part of the driver. The vehicle continues on its rounds or pursues a suspect, and the camera focuses, with an individual in the control center able to enhance the picture to see inside a vehicle even hundreds of meters away.

Add to that Bynet's unique video correction system, and security and law enforcement officials won't miss a move suspects make.

An inside look at Israeli intelligence

By Yossi Melman

The United Nations decides to impose new, more forceful sanctions against Iran. A dramatic announcement from the Iranian leadership concerning a "major event" is expected. Tehran expels inspectors from the International Atomic Energy Agency, and bars their access to its nuclear sites. It puts its ballistic missiles on a state of alert. The Syrian army is also declaring a state of high alert, and is initiating a large-scale military exercise. Hezbollah Secretary General Hassan Nasrallah rushes to Damascus for a surprise visit. Israel's top intelligence officials convene for an emergency meeting. They estimate that the sequence of events indicates Iran's intention to announce that it has developed nuclear weapons. Syria and Hezbollah coordinate positions, in anticipation of a possible Israeli or American attack. All parties prepare for war.

This scenario, created by Brig. Gen. Amnon Sofrin, was sketched to illustrate the complexity of seeing the "intelligence picture." Sofrin presented the scenario at an international conference on security, defense and intelligence involving hundreds of participants from dozens of countries; the event was sponsored by International Security and Defence Systems Ltd., a private company headed by Leo Gleser.

Two and a half years ago, Sofrin completed his term as head of the Mossad's intelligence directorate, and today he works as a private consultant on security matters. In 2003, he was recruited by Mossad chief Meir Degan. Before his work with the Israeli spy agency, he held a number of intelligence roles for the Israel Defense Forces, including stints as the Central Command's intelligence officer and commander of the IDF land forces' intelligence and reconnaissance center.

Though his lecture was theoretical, Sofrin believes his intelligence assessments should be taken seriously, as a result of his past experience, particularly his five years of service as head of the Mossad's intelligence directorate. That directorate consists of a number of units, including a research division and a unit responsible for prioritizing and evaluating information. The directorate restructuring was undertaken by then-Mossad Director Efraim Halevy in response to the botched attempted assassination of Hamas leader Khaled Meshal in Jordan in 1997.

During Degan's term, the directorate underwent some additional alterations. According to foreign sources, during the years of Sofrin's service, the Mossad carried out some notably successful operations that made a significant strategic contribution to Israel's security. Without exposing secrets, it can also be assumed that the Mossad's intelligence directorate made invaluable contributions to Mossad operations. Sofrin refuses to discuss his Mossad work, and is especially reticent about operations for which Israel has never admitted involvement.

*Former Mossad intelligence directorate head **Amnon Sofrin**.*

In a discussion with Haaretz, Sofrin emphasized that intelligence goes beyond the collection of information - the process of evaluating the information is also complicated and crucial. The scenario sketched above about regional preparedness for war can be interpreted in different ways, Sofrin notes; Iran doesn't necessarily have nuclear weapons, but is instead

attempting to deter any aggression. The Syrian army movements could be part of a routine, annual training exercise; and Nasrallah might, on this alternative scenario, be traveling to Damascus to coordinate the continued flow of weapons.

"Intelligence," Sofrin said, "is not designed to serve itself, but is rather a tool that supports the decision making process. As a first step, a coherent intelligence picture must be formed. The problem is that in the case of most intelligence assessments, the available information is imperfect. Only 50-60 percent of the intelligence picture is based on solid information, and the remainder comes from assessment and interpretation." Sofrin explains that intelligence evaluation derives from experience and accumulated knowledge; such assessments are not foolproof, and can result in error. "The history of intelligence is the history of misinterpretations and errors," he said.

After information is collected and a senior intelligence officer fills in holes by making assessments, the officer needs to confer with decision makers. Sofrin was involved in many such consultations. He briefed prime ministers and government ministers, took part in cabinet meetings and various secret deliberations; in such forums, he delivered the Mossad's intelligence assessments. Not all decision makers were cognizant of nuances and details related to the evaluation and prioritization of intelligence materials and the finalization of an intelligence assessment and some would demand concrete answers. Sometimes the politicians drew conclusions that differed from assessments reached by officials in the intelligence community. Under opaque circumstances, decision-makers, like the public itself, deal with confusion, and have trouble accepting the fact that "intelligence leaves question marks," as Sofrin phrases it. In many instances, he said, "intelligence does not solve the problem."

Sofrin acknowledged that people harbor "great expectations concerning intelligence officials, and think that we are magicians. There is a myth in the Israeli public that intelligence is omnipotent. You have to take into account that we operate in a difficult region. We have to prioritize, and that means taking risks - in fact, intelligence work is, to some extent, risk-taking." All told, Sofrin concluded, "without belittling the work done by others, I have no doubt that Israeli intelligence is superior in terms of understanding the region of the Middle East, and obtaining information about it." ■

Israeli Companies at IFSEC India 2010

IFSECINDIA
23 - 25 November 2010
BEC, Mumbai / India

IFSEC India 2010 is the unrivalled commercial and homeland security and fire protection exhibition demonstrating the latest products, services, new technology and the opportunity to network with over 11,000 Security & Fire professionals and 220 leading security companies. Homeland Security India 2010 and IFSEC India will bring together the leading Indian and international homeland security solution providers with the key decision makers and influencers from the Indian Government and private industry looking to source the latest homeland security innovations and technology. It will take place on 23-25 November 2010 at the Bombay Exhibition Centre, Goregaon (E), Mumbai.

The Israeli Homeland Security companies participating in the exhibition are as follows:

Cellebrite - mobile data secured (www.cellebrite.com)

The pioneers in mobile phone to phone content transfer, Cellebrite supports the mobile industry's retail and repair operations with solutions for phone-to-phone data transfer, backup and management, and content delivery.

With proven ability to impact sales of phones, upgrades, and services, Cellebrite customers include the world's largest mobile operators and deployments by more than 140 major carriers.

In use by military, law enforcement, governments, and intelligence agencies across the world, Cellebrite's Universal Forensic Extraction Device (UFED) is able to extract and analyze data from more than 3,000 phones and mobile devices, including smartphones, mass storage devices and GPS systems.

ECI (www.ecitele.com)

Beyond the traditional role of a telecom vendor, ECI Telecom has become the partner for growth of their customers worldwide.

ECI's Government and Defense Solutions division (GDS) specializes in the specific and unique needs of government and defense forces. Unlike commercial service providers, these organizations face distinctive challenges that demand robust, flexible and secure networks, to support mission-critical applications at all times.

Government and defense forces are tasked with the unenviable responsibility of protecting their citizens from internal and external threats, man-made or natural. That implies a state of constant readiness and the need to maintain communications among

these bodies running at high performance at all times. Through the deployment of state-of-the-art, yet field-proven, networks, ECI teams up with you to address these challenges.

LogiTag (www.logi-tag.com)

LogiTag Systems is an Israeli technology company that provides RFID based security solutions. The company was formed in 2004 by a group of experienced engineers in the radio-frequency and computers science that identified the growing need in the field of RFID for comprehensive solutions based

on unique technologies. The company's technological expertise and deep understanding of market needs enabled it to develop unique products that suites variety of industries while providing high-value and quick ROI.

Lotan Security (www.lotansecurity.com)

Focusing on physical security design in a variety of fields including critical infrastructure, border checkpoints (land, sea and air), aviation, dignitary protection and high value facilities (commercial and governmental), the company specializes in

designing training systems, building unique and tailor made systems for the establishment of Defense and Home Land Security deployments.

As a sister company to Meshulam Levinstein contracting and engineering, Lotan security has leveraged this experience to provide high quality security solutions for high rise buildings and other critical infrastructure such as airports, seaports, iconic facilities and commercial entities such as malls and hotels to mitigate threats of terror and crime.

Magna (www.magnabsp.com)

Magna's innovative Passive Electro-optical Radar System is applicable to numerous areas of Homeland Security and others including perimeter control, facilities protection, border security, coastal defense.

This Stereoscopic technology provide the best solution for

Critical Area like airports and runways, as Automatic Safety Runway Surveillance System, fusion of aircraft detection, bird's detection, Foreign Object and Debris (FOD) detection system, Runway Traffic inspection and Intruder detection.

MIPSOS Multidisciplinary Security Group (www.mipsosgroup.com)

The Mipsos group consists of veteran security companies offering a wide spectrum of security solutions :

Security Consulting and blast mitigation for high-risk zones such as airports, power centrals, government buildings and others.

Security threats/risk assessment and Integral Security Plan.

Mul-T-Lock Technologies (www.mul-t-lock.com)

Founded in 1973 by two young inventors - Avraham Bachri and Moshe Dolev, Mul-T-Lock® Ltd. is a worldwide leader in developing, manufacturing and marketing High Security products for institutional, commercial, industrial, residential and automotive applications

Mul-T-Lock holds hundreds of international patents for its innovative products, which

include mechanical cylinders, locks and padlocks, electromechanical locking systems, electronic door solutions (EDS), automatic assembly and key-cutting machines and complementary accessories.

Mul-T-Lock is a fully owned selling unit of Assa Abloy, the world's leading manufacturer and supplier of locking solutions, with an annual turnover of more than $3 billion and more than 30,000 employees worldwide.

With its readiness to rapidly respond to any challenge, Mul-T-Lock enhances peace of mind by delivering comprehensive, customized, top security cylinder locking solutions and services worldwide.

Assa Abloy is the global leader in door opening solutions, dedicated to satisfying end-user needs for security, safety and convenience.

OPGAL Optronic Industries (www.opgal.com)

OPGAL is a leading global manufacturer of innovative thermal imaging cameras and engines.

For over 25 years, Opgal's cooled and uncooled thermal products have been successfully implemented worldwide, serving customers in the security, defense and aviation markets.

Opgal's thermal security cameras are easy to deploy, highly reliable, and provide outstanding quality and performance.

Opgal's vast experience in the field, and its commitment to customer needs, ensures its customers benefit from both ease of use of off-the-shelf security cameras as well as customized tailor made solutions.

Seraphim Optronics (www.seraphim.co.il)

Seraphim Optronics is a well-established company in the area of covert surveillance for over 14 years, which specializes in electro-optical systems for covert surveillance in defense, military, paramilitary and civilians markets.

Seraphim develops, produces, handles sales and support of its products worldwide. As a systems house, Seraphim can tailor its solutions to customer requirements. ■

India's Homeland Security: A High Growth Sector

Occurrences like the 26/11 Mumbai terror attacks, security concerns emanating from the 2010 Commonwealth Games, increasing instances of domestic terrorism, ethnic conflicts and other real and perceived threats have reiterated the critical importance of protecting the internal environment of the country from any potential disruption. In light of these events and threats, the Central and State governments in the country now perceive the modernization and up-gradation of the country's Homeland Security infrastructure as an area of priority. Following are excerpts from a report on Homeland Security by **KPMG** and **ASSOCHAM:**

India's Homeland Security agencies primarily consist of the paramilitary forces, State and central police forces and the intelligence agencies, all under the aegis of the Indian Ministry of Home Affairs. The Ministry of Home Affairs has identified the following sectors as priority areas which need specific focus to strengthen the Homeland Security of the country.

matters relating to disarmament and international security.

India is often referred to as a 'soft state' given its perceived inability to systematically and categorically deal with several threats to the country's Homeland Security. There is a plethora of State security agencies with a minimal ability to coordinate towards dealing with these threats in an

are several areas which are critical to the Homeland Security of India and thus require specific focus.

Police and paramilitary modernization

A well trained, well equipped and efficient police force is the bulwark of the internal security infrastructure of a country. Police modernization has been a focus

Homeland Security in India is handled by a multitude of bodies with complex functional and reporting relationships. Law and order is a State subject and the State police are responsible for maintaining law and order internally. The Ministry of Home Affairs is responsible for internal security, management of paramilitary forces, border management, Centre-State relations, administration of Union Territories and disaster management. The Ministry of Defence obtains policy directions of the government on all defence and security related matters and communicates them for implementation, disaster management and maintenance of law and order . The Ministry of External Affairs is involved with foreign policy formulation and in

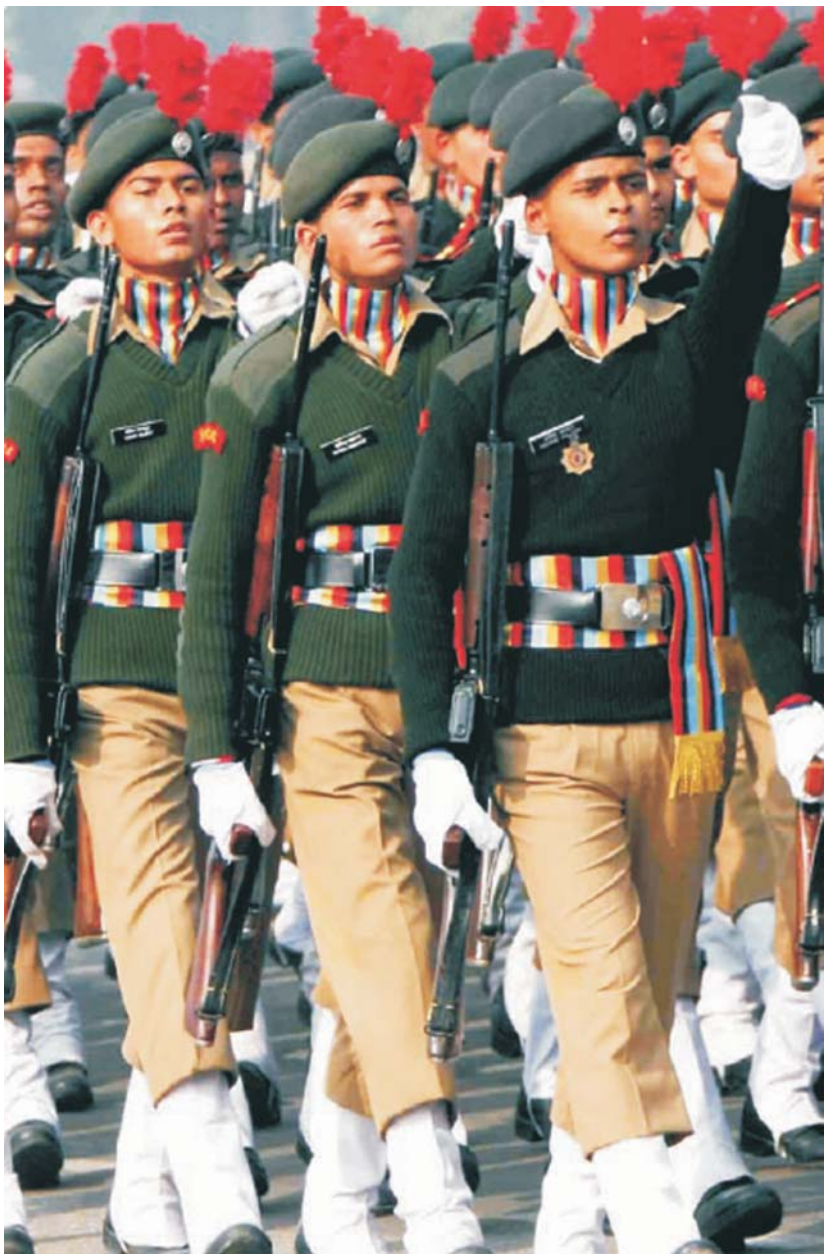
effective manner. In an attempt to organize the Homeland Security apparatus of the country, the Ministry of Home Affairs is gearing itself to create a supporting infrastructure for the long term with an organized and targeted development of India's Homeland Security focused infrastructure. This includes modernization programs for providing better equipment and training to the security forces deployed with the task of Homeland Security in India, creation of a centralized comprehensive database called National Information Grid (NATGRID) by combining the individual databases of several government agencies, setting up of the CCTNS (Crime and Criminal Tracking Network and Systems) and several other such measures. In this endeavor, there

area for strengthening the Homeland Security apparatus of the country. Presently, the cumulative annual budget allocation for all States and Union Territories under the specific expenditure head of 'Police' is approximately INR 44,354 crores, which, despite a 21.7 per cent increase over the 2008-09 amount of INR 36,434 crores, still amounts to a meager 4.3 per cent of the total budgeted expenditure of all States and Union Territories in 2009-10 . Of this amount, more than 80 percent is spent on salary and maintenance of the forces and only about 20 percent is available for training and other capability building activities.

In addition to this amount, the Ministry of Home Affairs released INR 1,230 crores as central funds for the modernization of India's

police forces in 2009-10. Also, in order to enhance the Homeland Security of the country through a specific focus on certain identified cities, the Ministry of Home Affairs allocated over INR 450 crores in 2009 for city surveillance projects.

Such initiatives are likely to go a long way in addressing the requirements related to police modernization. Furthermore, in order to strengthen the police apparatus and adequately train the available manpower to face the emerging challenges relating to intelligence and cyber crime, anti terrorist unit, quick response teams, industrial security force and coastal security, the States need to increase their budget allocation so that adequate funds are available for recruitment, creating a modern training infrastructure, acquisition of better weapons and other facets of police modernization like using IT to enable inter-connectivity of police databases of the different States.



India has had to contend with terrorism in its different manifestations for a long time. Till a few years back, terror attacks were primarily in the form of sporadic blasts in the target cities. The situation changed somewhere around 2008 when India witnessed a new form of organized, sophisticated terrorism. The synchronized large terror attacks on the Indian soil demonstrated the increasing ability of terrorists to exploit the abundant communication infrastructure for collaboration, financing, intelligence gathering and execution of the terror attacks. This was further accentuated by the weak infrastructure and Homeland Security apparatus.

The challenges faced by this sector include an expanding transnational terrorist threat as well as the Maoist/Naxalite activities in eastern and central India. The changing nature of terrorism needs better networked resources to effectively combat the growing instances of such activities in the country. In an attempt to fight terrorism by checking cross-border infiltration, the Indian government has realized the necessity of deploying specialized technologies on all its borders. India is expected to spend INR 4,500 crore on domestic security before 2016.

In this context, the Ministry of Home Affairs has proposed to create a Multi-Agency Centre (MAC) that will work at both the Center and State level to compile

intelligence from and disperse intelligence to the participating agencies and set up a National Counterterrorism Centre (NCTC) which would be the nodal point for handling all aspects related to terrorism In India. There is approximately INR 324 crore allocated for this endeavor. A further amount of INR 10.50 crore has been released to establish 7 counter insurgency and anti-terrorism schools in 5 States.

Coastal and Maritime security

India has a coastline of about 7,500 km running along nine States and four Union Territories. A constant threat to India's security has been the possibility of terrorists entering the mainland by exploiting the country's porous maritime borders and perpetrating undesirable activities. These concerns were brought to light yet again when the perpetrators of Mumbai terror attacks entered India by exploiting the weak maritime border security.

Concerned with the nature of the porous maritime border and inadequate maritime security of the country, the Ministry of Home Affairs stated in 2008 that the Government of India had planned to enhance surveillance and patrolling of India's coastline to discourage infiltration attempts by terrorists through the sea lanes.

In 2009, the Ministry of Home Affairs allocated over INR 225 crores in equipment for detecting arms and ammunitions in containers. The Government also sanctioned 73 coastal police stations under the Coastal Security Scheme, of which 64 are currently operational. Such efforts need to be strengthened through better management of maritime security efforts and specific coordination within different agencies dealing with India's maritime security. Towards this agenda, the Phase II of the Coastal Security Scheme has been finalized wherein 131 police stations are proposed to be established in the coastal areas of the country.

Naxalism

At a meeting organized by India's Intelligence Bureau, the Prime Minister of India expressed great concern over the naxal violence in India by categorizing it as the 'gravest internal security threat' and also referring to the need for a more professional and well trained, technologically sound police force to combat this threat. The different States impacted by naxal violence in India are realizing the inter-State ramifications of naxalite activities and the need for inter-State coordination and cooperation. Issues of good governance, development, and public awareness are increasingly becoming essential in dealing with naxalite activities, in addition to core policing requirements.

The Government has taken certain coordinated action steps in this regard including creation of an effective policing mechanism in the impacted States, ensuring adequate provisions for equipment, , training, and other supporting facilities for State police forces, strengthening of the State intelligence set-ups, establishment of Counter Insurgency and Anti-Terrorist (CIAT) Schools to impart specialized training to State police personnel in respect of counter insurgency, jungle warfare and terrorism in Assam, Bihar,

Chhattisgarh, Orissa and Jharkhand.

Furthermore, the central Government has allocated an amount of INR 515 crore in 2008-09 for Modernization of State Police Forces (MPF) scheme with the entire amount having been released to the 9 affected States of Andhra Pradesh, Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal.

An integrated approach aimed at relatively more affected areas has been adopted, including programs for special attention on planning, implementation and monitoring of development schemes in 34 naxal violence affected districts in 8 States. Under a similar initiative, called the Backward Districts Initiative, an amount of INR 45 crore per district had been allocated on a nonlapsable basis to focus on integrated development in 147 naxal violence impacted districts .

Intelligence and Cyber Crime

Intelligence gathering and leveraging the collected information adequately to pre-empt any terrorist or related undesirable activity is central to the efforts targeted towards Homeland Security of the country. Intelligence in internal security management has various components like intelligence collection within India's frontiers, transborder intelligence collection and the use of critical technology for the collection of intelligence specifically required for the internal security management.

India's efforts at intelligence gathering are inadequate with a plethora of agencies involved in this activity without any single control and coordination authority to manage the intelligence gathering process. Also, intelligence gathering at the State police levels is in a nascent stage with only about 1-1.5 percent of the total police force performing intelligence duties. Intelligence gathering needs to be enlarged, coordinated and managed through modern communication and analysis tools and technologies.

Critical infrastructure protection

Critical infrastructure of a country includes public and private assets that are of strategic importance to the economic, political or security interests of the country and include infrastructure such as airports, industrial installations, national monuments, energy supply pipelines, nuclear and conventional power plants, etc. Besides airports, mass transportation and maritime security the other key segments for Homeland Security market also include large events such as the just-held Commonwealth Games, border security and first responders.

India's increasing economic power is reflected through mega projects like the Commonwealth Games 2010, Bandra-Worli Sea Link, the T3 International Terminal of the Indira Gandhi International Airport at Delhi, etc, which are increasingly becoming susceptible to external threats. Such infrastructure is more susceptible to terrorist attacks given its importance to the larger nation.

Protection of such infrastructure from tangible and cyber threats requires specific focus and is an essential element of the Homeland Security of the country. There is an immediate requirement for conducting a National Risk Assessment to identify and map the critical assets of the country on the basis of a systematic analysis to assess the overall risk and vulnerability of the assets to any threats. The next step will be the development and maintenance of adequate counter-measures and emergency plans, including programs for providing awareness training to the security staff of such facilities.

The Central Industrial Security Force (CISF), which is an elite force protecting the critical infrastructure of the country, was created to provide security cover to key industrial infrastructure units including nuclear power plants, State installations, refineries, ports, etc. However, the

major challenge before the authorities is to preempt any such attacks and to have effective monitoring systems that can help in the identification of potential threats to the critical infrastructure of the country. This requires a dedicated focus in terms of special equipment, trained manpower and coordinated intelligence gathering about any potential threats. In this context, a distinct aspect of critical infrastructure protection is a pressing need for public-private partnership, especially since most critical infrastructure is in the hands of private players even though the protection of these assets is still perceived to be the responsibility of the Government.

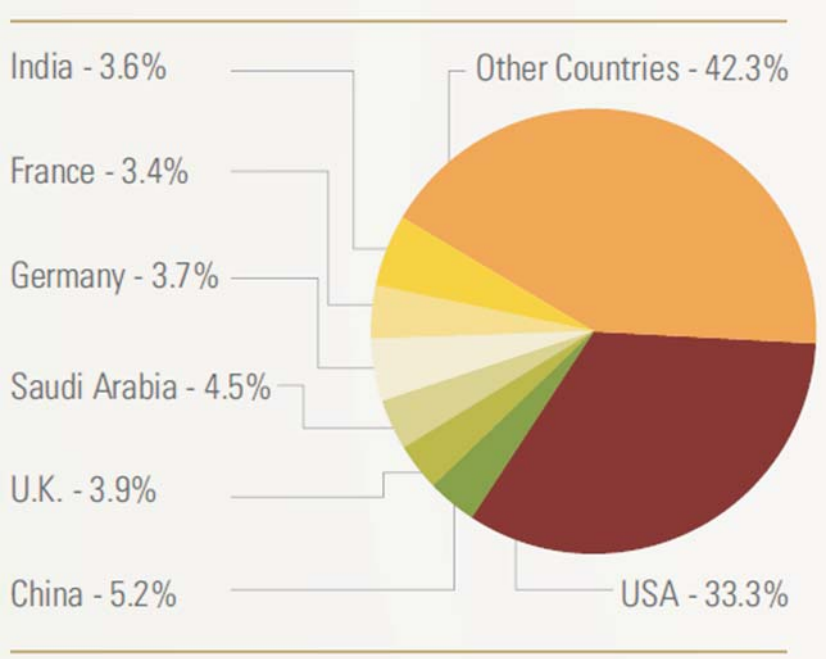
Possible areas where private sector can complement the Governments skills and resources in protecting critical national infrastructure include intelligence analysis to transform information into actionable knowledge, implementation of new information technology tools and communication processes, emergency management and response planning and providing industry specific recommendations for protecting critical national infrastructure.

Homeland Security sector in India

Given its increasing focus on Homeland security, the Government of India has initiated several steps to coordinate, consolidate and structure its approach to better manage this sector in the country and to overcome the current internal and external threats. One such initiative involves plans to set up a National Intelligence Grid to link all the intelligence agencies in various ministries and departments that deal with Homeland Security.

Another significant initiative is the ongoing drive to provide a Unique Identification (UID) Number to all Indian citizens which is also aligned to the wider cause of intelligently networking the Indian ecosystem. These and several other similar initiatives launched within the larger ambit of Homeland Security have the potential of creating considerable opportunities for large industry players to enter into the Homeland Security market.

Over the next decade, India, along with Britain, Germany and France, is expected to emerge as the largest players in the global Homeland security market as opposed to the present situation wherein the US continues to be the dominant player with about 35 percent of global procurement in this field . In fact, China, India, Turkey, Saudi Arabia and UAE are expected to exhibit the fastest market growths in this sector, driven by a combination of economic growth along with increasing threats of terrorism faced by these countries.



Homeland security expenditure projection as a percent of global spending

India offers a large potential for firms looking to leverage the opportunity manifested in this sector in the country on account of the following factors:

- High GDP growth
- Challenging relationships with neighbors that are unlikely to be resolved in the years ahead
- Aging and obsolete equipment
- High spending on modernizing military capabilities and industrial infrastructure

• Significant efforts towards enhancing the intelligence and communication infrastructure

• Greater public-private participation opportunities emerging.

India is witnessing a growing focus on Homeland security in the backdrop of robust economic growth and an increasing threat of terrorism and related disruptive activities. Over the last few years, significant progress has been made in India in terms of improving legislation, strengthening security forces and streamlining procurement. Mumbai terrorist attacks of 2008 invited increased public scrutiny of the country's current State of Homeland Security and led to a strong political backing for several much-needed reforms like broadening the definition of terrorist attacks in the Indian legal system and creation of the National Investigative Agency along the lines of FBI in the US. The Ministry of Home Affairs has also announced plans to create a National Information Grid that can essentially integrate 21 existing databases of intelligence and enforcement agencies across the country.

In accordance with this increased focus on Homeland Security, the Government of India has also expedited the acquisition of critical equipment and items to improve the Homeland security infrastructure. The Government today is keen to forge strategic partnerships with other countries to learn from their experience and the manner in which the private industry has stepped up to assist the State in tackling the several threats faced by them internally.

The way forward to strengthen the Homeland Security scenario in India would entail the following action steps, some of which have already been initiated by the Government of India:

• Strengthen the policy framework in order to fully realize India's vision for Homeland Security by encouraging greater public private participation, allowing access to and adoption of latest technologies and leveraging the growing defence sector specific competencies created within the country

• Further strengthening of the police and paramilitary forces and intelligence machinery at the Centre and in the States through better manpower, training, equipment and other related support

• Support greater private-public-partnerships and platforms for interactions between the Government and Corporate Institutions, creating a cohesive ecosystem

• Defining the minimum standards for contracts, equipments and training clearly to enable transparency in overall procurements

• Holistic expansion of defence offset policy under the Defence Procurement Procedure (DPP) to include equipment for the Homeland Security sector

• Enhanced critical infrastructure protection through increased physical security and better access control systems at vital installations by leveraging the latest technology

• Full and effective utilization of funds under the Police Modernization Scheme, Coastal Security Scheme, Backward Districts Initiative and other developmental schemes

• Improve the overall governance and delivery systems of public goods and services

• Citizen involvement initiatives aimed at encouraging citizens to partner in safeguarding the internal security environment of the country.

Given the Government's focus on securing the country from all threats arising from a weak Homeland Security scenario, the outlook for this sector in India is bright. Several reforms have been initiated in the recent past to strengthen and consolidate the existing Homeland Security infrastructure in the country. However, imparting further momentum to the needed reforms will require intensification of the Government's on-going active management and fine tuning of policy, regulations, process and fiscal environment to help ensure strong domestic growth and the achievement of self-sufficiency.■

Bank's Major Initiatives

- Export Credits
- Finance for Export- oriented Units
- Overseas Investment Finance
- Lines of Credit
- SME & Agri Finance
- Support for Grassroot Enterprises
- Export Services

Products and Services

- Export Marketing
- Pre-shipment
- Post-shipment
- Investment Abroad
- Advisory Services
- Import Finance
- Export Product Development
- Export Production

EXIM Bank

Owned fully by the Government of India, the Bank was established by an Act of Parliament in September 1981 and commenced operations in March 1982. Exim Bank is an apex financial institution catering to diverse needs of exporters and importers, and facilitating two-way investment flows.

EXIM Bank's catalytic role

Ever since its inception, the Bank has been actively involved in catalysing India's international trade and giving it an enduring identity in the global market, through its pioneering initiatives to serve its constituents all over the world.

Awards

EXIM Bank has undertaken a multitude of promotional activities through innovative projects that have been highly acknowledged by its clientele and stakeholders

- 'Book of Honor Award' by the US-based World Trade Centers Association in 2002.
- 'Trade Development Award by the Association of Development Financing Institutions in Asia & the Pacific (ADFIAP) in 2009, and "SME Development Award" in 2008.

Our evolving vision for your dream

To develop commercially viable relationships with a target set of externally oriented companies by offering them a comprehensive range of products and services, aimed at enhancing their internationalisation efforts.

Our goal for your future

At EXIM Bank we aspire to promote the country's international trade by providing comprehensive to exporters and importers globally. The future will witness a plethora of products and services for the Rural Grassroot and SME sector, as EXIM Bank will take rural productsto the

EXIM Bank is dedicated to encouraging globalisation efforts of Indian enterprises across all sections of the economy. • Rated by Moody's (Baa3), JCRA (BBB+), S&P (BBB-) and Fitch (BBB-) • 27 years of continuous profits and dividends • Resources raised in International Debt Capital Markets through Loans/Bonds/FRNs/Samurai Bonds

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