

Talking dogs and behavior alerts: Israel police go high-tech

Startup nation? A peek into several startlingly sci-fi policing projects now in the works.

By Yaniv Kubovich | 11:40 12.04.14 | 0

The invasion of citizens' privacy by state authorities will deepen in 2014 and the fight against crime will make citizens increasingly vulnerable, according to a document published by the Public Security Ministry containing the main points of its work plan for 2014.

The document provides a fascinating peek into the projects and studies conducted by the Israel Police in cooperation with the United States Department of Homeland Security, which will be providing innovative equipment for fighting organized crime.

The goal of the police for the coming year is to increase the use of DNA databases, install smart video camera systems on the streets to monitor people's behavior, deploy systems that will be able to smell us and even dogs who will talk to us.

According to the document, the police and the ministry are following two channels in their adoption of crime-fighting technology: local technological development, in cooperation with police units and universities, and development through international cooperation, mainly with the American department of homeland security.

"Today, most of the evidence comes from interrogation rooms, but it is likely that in 20 to 30 years, most of it will come from outside the interrogation room," said police chief Yohanan Danino at the Science and Technology in the Service of Security conference at the Institute for National Security Studies in Tel Aviv last month. "We are working mostly in the technology field. The goal is to take everything we have and see how it can be used properly to gather evidence."

Talking hound heads

In a section entitled Developing and Establishing International Cooperation for the Fight against Organized Crime, Serious Crime and Cross-border Crime," the document describes an American-Israeli joint project for reading the brain waves of dogs. According to the document, dogs' brain waves will be translated into human language by a device that resembles the portable microphones worn by stage performers. The day still appears to be far off when dogs owned by Israeli organized-crime kingpins will testify as state's witnesses, but ministry officials and its chief scientist take the project seriously.

"This is a very challenging project that I can't go into much detail about," says Zvi Kanfer, the head of the ministry's Science and Technology Division. "This is a joint project of the police, the ministry and the Americans. Today, the police use dogs to search for drugs, weapons, explosives and other things. The dogs are tired some of the time, or do not respond in the way their handlers expect of them. The goal of the project is to read the dogs' brain waves as they are working and experiencing the event. Through the dog's brain waves, which would be recorded by the device, the dog would broadcast that drugs, or some other thing, had been found."

Currently, police dogs are being used for the project. If they really do learn to "talk with the police officers," they may be deployed on city streets, identifying people who are carrying drugs in their pockets, for example. Kanfer says, "We are at a very advanced stage — building a database that allows dogs' brain waves to be read for police purposes. We have no intention at the moment of going into studies of work with dogs belonging to victims or suspects."

Dr. Orit Chai, an animal neurologist at the Koret School of Veterinary Medicine in Beit Dagan, believes that the project is too futuristic and ambitious. "We can read dogs' brain waves today, but it's a long way from doing that to reaching a situation where we can understand how to interpret them and transform them into human language. It's something that doesn't exist, and it sounds like it verges on the bizarre," she said.

The brain wave project is not the only one involving canine capabilities. A recent lawsuit against the Israel Police over the awarding of a tender revealed a method called RASCARGO, or Remote Air Sampling for Canine Olfaction. Learned in France recently by a local police animal handler, EASCARGO involves drawing air from a cargo container and giving it for testing to sniffer dogs in an entirely different location. This method is rapid and efficient, since the dog and his handler are not in contact with the public, and has the advantage of keeping the dog in a sterile environment.

Electronic nose to sniff out rare scents

There may also be a replacement for sniffer dogs. The public security ministry is working with the Technion to build an "electronic nose" to replace police dogs, a device that will be able to compare the scents of different human beings. The intention is to check whether the scents produced by human beings in pressured situations are exclusive to the person, like fingerprints and DNA. Using a specially-developed device, scientists have tried to recreate the dogs' ability to absorb scents.

If the experiment should find that scents, like fingerprints, are unique to the person, then the device will be able to be used in crime situations. By drawing in air, the electronic nose will be able to tell whether a certain person was at the scene. But it is still a long way until it becomes acceptable in court, and the future of the project is in doubt. "We have no unequivocal findings that provide certainty that a person's scent is unique to him. We need at least two more years of research to gain certainty, and we haven't decided yet whether we're going to continue the study," Kanfer says.

Restoring erased numbers engraved in metal

Another joint project being developed by the police, the ministry and the American administration, is an analytical system that will restore erased numbers for investigative purposes. The Americans are investing a great deal of money in this project, and the Israel Police would very much like to have this capability as well. Ministry officials refused to elaborate about the project for fear of revealing their capabilities. The project involves a chemical solution that restores numbers and symbols engraved in metal. If a motorcycle or car is stolen and its vehicle identification number erased, the solution can be used to restore the number. The solution does not work on all types of metal, but the project's success could provide the police with high-quality information after attempts have been made to destroy the evidence.

Video analysis and identification of emotions

Still another project is advanced video analysis for the early detection and prevention of anti-social behavior and crime on the street. The project uses street video cameras and control rooms in local authorities, but it entails far greater invasion of privacy than is customary today.

Soon, people will be able to see not only where we are going and what we are wearing, but the police will also know how we are feeling.

Today, the person in the control room cannot know in advance what a suspect may be planning. Neither can he know whether the group of people he is watching on the screen is a birthday celebration or the beginning of a violent incident. "The idea is to construct an algorithm that will identify unusual and suspicious behaviors which can be characterized. The moment the system can identify a drunk person, a terrorist or a stabber, it will raise a red flag for the operator," a ministry official said. "The system will be able to tell the difference between a person who is upset and looking for his car in a parking lot and a person who is walking around the parking lot and planning to break into a car."

Although the system does not exist yet, a great deal of money and resources are being invested in its development. The Israeli public security ministry decided to invest in it, as did the British Home Office, which joined the project recently. "For us, this is the project. This is where we are investing our money," ministry officials said.

Police pursuits in low gear

In addition to the above-mentioned projects, a new system is being developed to stop vehicles slowly. The police have a problem stopping escaping vehicles. In many cases, attempts to stop vehicles fleeing at high speed end with the vehicle overturning or in an accident involving bystanders

An Israel-developed smart net is embedded in the road and surfaces when the escaping vehicle goes over a tripwire. It contains small nails that puncture tires, stopping the vehicle safely. "The system will give us a solution for vehicles of more than four tons, or those going faster than 120 kilometers per hour," a spokesperson for the ministry's chief scientist's office said. "It will be able to stop a car traveling rapidly on Route 6 without anyone nearby, or the driver, getting hurt."

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