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INNOVATION SNAPSHOTS

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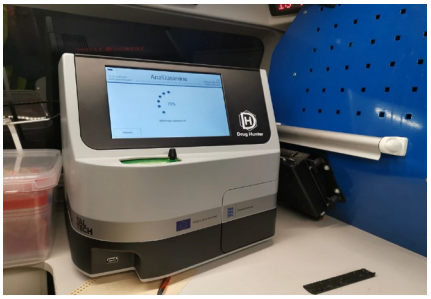
For contributions: snapshots@interpol.int

ESTONIAN POLICE'S DRUG HUNTER ANALYZER

The Estonian Police and Border Guard Board developed an award-winning rapid narcotic analyzer in collaboration with researchers from the Tallinn University of Technology. The 'Drug Hunter' allows for faster and more efficient on-site drug testing. The device carries out quick and reliable drug detection in about six minutes using an oral fluid sample.

Previously tested at various major festivals and in traffic surveilance, the analyzer has also been used and accepted as evidence in a criminal proceeding. A product of eight years of research and development, not only do the police look forward to using more of these devices but consequent work is underway to add new analysis protocols and reduce its size so it could fit in all types of police vehicles.



The technology uses capillary electrophoresis and deep UV fluorescence detection to provide immediate quantitative results for each illegal drug in oral fluid. Apart from being able to identify and quantify drugs separately in multi-drug abuse cases, Drug Hunter can also differentiate compounds that are structurally alike. The device helps police save time and aids in identifying drug abusers who may be a danger not only to society but also to themselves.

Sources: https://www.politsei.ee/en/news/the-police-and-border-guard-board-wins-europol-excellence-award-in-innovation-11535;

https://estonianworld.com/technology/estonian-police-wins-the-europol-innovation-award/; https://www.drughunter.eu/

AUTONOMOUS PATROL CARS FOR ADDED SECURITY

Following the adoption of drones and robots for improved security coverage, law enforcement agencies are also utilizing autonomous patrol cars as an added surveillance tool.

The Beijing Municipal Public Security Bureau, along with the Beijing High-Level Autonomous Driving Demonstration Office, is already testing 15 unmanned police patrol cars in the capital. Performing round-the-clock duties with police officers, the vehicles are being tested for patrolling, large-scale event security, public announcements, emergency rescue work, and issuing warnings. Currently working within the demonstration zone, it features a 360-degree multi-sensor fusion with 120 meters of range. Additionally, it possesses autonomous driving technology that provides a 100 km driving range and complete battery replacement within 30 seconds.

This follows similar plans from the Dubai Police to deploy self-driving electric patrol cars in residential areas. Allowing consistent patrolling for up to 15 hours, the Dubai Police's self-driving electric vehicle features a 360-degree advanced security camera with facial recognition technology and AI to detect criminal behavior, scan license plates, and identify faces. Moreover, the vehicle also includes a deployable drone for added surveillance and communications technology to instantly communicate with the police command center.

Source: https://news.cgtn.com/news/2024-01-17/Self-driving-police-patrol-cars-tested-on-Beijing-roads-1qqLdb7A8lq/p.html;

https://mediaoffice.ae/en/news/2023/October/16-10/Dubai-Police-Boost-Residential;

https://www.digitaltrends.com/cars/dubai-police-to-deploy-driverless-patrol-cars-with-ai-smarts/

DID YOU KNOW?

The South African Police Service's Mariannhill Police Station in Pinetown is piloting a locally developed document certification machine to certify firearm licenses. Developed by a young innovator with support from the Department of Science and Innovation's Grassroots Innovation Programme, the tool aims to tackle the prevalence of identity theft and fraudulent documentation in South Africa. Enabling the verification of a document's authenticity, the machine only confers certification following the document's corroboration against original copies that are scanned, uploaded, and stored on network servers.

Source: https://www.dst.gov.za/index.php/media-room/latest-news/4049-innovation-aimed-at-eliminating-fraud

WORLD'S FIRST PATENTED HEADS-UP DISPLAY FOR DRONE PILOTS

The Netherlands Police tested a drone management heads-up display (HUD) which improves drone pilots' investigations and situational awareness. From flying beyond visual line of sight environments and detecting survivors in hard-to-reach areas, the HUD also offers a simulation mode that provides drone pilots an opportunity for immersive real-life trainings. The Netherlands Police are currently in the process of acquiring the HUD for detailed testing and future support for their law enforcement units.

A recently launched training module also comes with a feature allowing users to simulate flying a drone in various conditions from any location with zero risk of damage to the drone. The software works in several mixed reality headsets such as Meta Quest Pro 3, Hololens 2, and Magic Leap.

This allows the drone pilot to use the headsets and see a full heads-up display with all the relevant telemetry data complete with maps, as well as the ability to drop pins for search and rescue teams to locate people faster after finding them.

These features were built after feedback from the police force in Finland and have since been adopted by police forces and first responders in Ireland, the Netherlands, Norway, the UK and the United States, and is undergoing testing in many other European countries.

Sources: https://anarkylabs.com/augmented-reality-heads-up-display/; https://anarkylabs.com/airhud/

DID YOU KNOW?

Cyberagentur, a German federal agency on research and innovation, is developing an agnostic method for the forensic analysis of AI systems, specifically image processing, text processing, and autonomous systems under its "Forensics of Intelligence Systems" project. Focusing on the detection, inspection, and analysis of traces in AI systems of various types and creation of corresponding tools to do so, the project not only aims to facilitate identification of possible perpetrators for malicious acts but also develop and implement scientifically validated legal frameworks and standards.

AGENDA

20th to 22nd February 2024
4th Responsible AI Global Meeting for Law Enforcement
Singapore

26th February 2024
Introduction to Synthetic Media Webinar

23rd February 2024
3D-Printed Guns Privately Made Firearms Webinar

20th March 2024
Innovation Centre Webinar on Smart Cities

KOREAN POLICE'S PORTABLE DNA FLUORESCENCE DETECTOR

Police in the Republic of Korea have introduced an innovative forensic technology, the 'Portable DNA Fluorescence Detector,' designed to facilitate rapid detection at crime scene investigations. Unveiled at an information technology and consumer electronics expo, the device was showcased by the Police Science Institute (PSI) at the Korean National Police University.

The Portable DNA Fluorescence Detector incorporates a light source sensor for the rapid identification and confirmation of genetic materials at crime scenes. This includes the ability to analyse skin cells from a suspect found under a victim's fingernails, enabling on-site verification of human DNA.

Initiated as part of the K-Sensor technology initiatives by the Ministry of Trade, Industry, and Energy, the development of this portable DNA detector has been underway since 2022. The PSI has spearheaded this three-year project in collaboration with entities such as the Korea Electronics Technology Institute. The project focuses on 'real-time high-sensitivity DNA detection sensor technology' specifically tailored for crime scene investigations.

By providing a swift and efficient means of identifying suspects' DNA at crime scenes, the technology aims to enhance the accuracy and speed of criminal investigations. It allows authorities to promptly gather forensic evidence without relying on time-consuming laboratory processes.

Sources: https://www.donga.com/en/article/all/20240116/4686529/1

POLICE IN MARYLAND USE TECHNOLOGY TO IMPROVE SAFETY OF VULNERABLE INDIVIDUALS

The La Plata Police Department (LPPD) in Maryland, United States is working with "Project Lifesaver" to safeguard adults and children with cognitive issues who are at risk of wandering. The project aims for a quick and prompt response to save lives and reduce injury risk by providing circular wearable radio transmitters. Worn like wristbands or bracelets, the transmitter, which is not a tracking device, sends out radio signals specific to the individual wearing it. If a person wearing the transmitter is reported as missing to the police, they arrive at the last known location. Police vehicles equipped with antennas would pick up the signal from the missing person's bracelet. Police also have handled receivers, programmed for the specific frequency of the wristband, which can be used once the officers get out of the car and begin their on-site searches. The receiver's sound rings louder as the police officer gets closer to the missing person. The wearable transmitters enable an efficient search by allowing response vehicles and handheld receivers to pinpoint the exact location of the missing person.

Particularly beneficial to people with Alzheimer's disease and children with autism, the device is offered free of charge to families who require 24-hour care for relatives at-risk of wandering. LPPD's Project Lifesaver collaboration is supported by the Bureau of Justice's 'Reduce Injury and Death of Missing Individuals with Dementia and Developmental Disabilities' fund. This programme supports law enforcement agencies in developing tools that locate missing persons, reduce wandering, and improve the safety of vulnerable individuals.

Sources:https://thebaynet.com/la-plata-police-dept-acquires-lifesaving-technology-for-adults-and-children-with-cognitive-issues-who-are-prone-to-wander/;

https://m.youtube.com/watch?v=twKQbyaAMN0;

https://southernmarylandchronicle.com/2023/11/14/la-plata-police-department-enhances-community-safety-with-project-lifesavers-lifesaving-technology/

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Innovation Centre
INTERPOL Global Complex for Innovation
18 Napier Road
Singapore 258510
T: +65 65503569
Email: IC-Snapshots@interpol.int