



# INNOVATION SNAPSHOTS

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## ROBOTS ON DUTY ASSISTING POLICE IN SINGAPORE

Singapore's Police Security Command (SecCom) has recently added new members to their police search unit. The first is a bomb-detecting robot named MiniX, capable of sniffing out bombs, security threats, and suspicious objects. Expected to help reduce officers' workloads and exposed risks, these vehicles equipped with artificial intelligence software are deployed in telecommunication tunnels, drains, and manholes to scan for threats and ensure public safety ahead of large-scale events. Built to sustain all kinds of terrain and harsh conditions, these robots are going where officers should not, to continue responding to security threats.

Second to launch is their 'laptop-sized' drone, outfitted with cameras to inspect rooftops and other high-rise locations. This has made the work of police search units more efficient and cuts search time in half as officers no longer need to get on the roofs of all buildings and also decreased the risk factor of climbing and searching high-rise roofs. This device is now part of a fleet of drones used for crowd management operations and search-and-rescue missions.



### RoSAS

Interested in robots and autonomous systems? Join us at the 1st INTERPOL Robotics, Sensing and Autonomous Systems Forum to be held in Riyadh, Saudi Arabia on 7-8 December!

<https://www.research.net/r/ROSAS-2022>

Earlier this year, the Singapore Civil Defence Force also unveiled the adoption of a robotic dog called 'Rover-X' which was deployed for search-and-rescue missions.

Source: <https://www.straitstimes.com/singapore/bomb-detecting-robot-a-new-addition-to-police-search-unit>

## SENSOR TECHNOLOGIES TO DETECT ILLEGAL DRUGS AND EXPLOSIVES MANUFACTURING

Supported by the European Union, 'SYnergy of integrated Sensors and Technologies for urban sEcured environMent' or SYSTEM is a project aiming to develop a customized sensing system for hazardous substances detection in complementary utility networks and public spaces.

SYSTEM's data fusion capabilities support law enforcement agencies in uncovering illicit criminal activities, notably by identifying the preferred storage locations for chemical precursors and clandestine laboratories for illicit drugs and explosives production.

In fact, the technologies involved in the project are able to send real-time data to a monitoring centre warning about events likely connected to the production of illicit drugs or explosives.

The combination of different types of sensing and sampling technologies allows the detection of traces of chemical precursors and by-products of the clandestine manufacturing of illegal drugs and explosives that are left in the air, sewage systems, garbage bins and more. Nevertheless, SYSTEM's technology is not specific for certain substances and thus can be used for overall environmental monitoring.

Law enforcement agencies worldwide will benefit from SYSTEM, notably enhancing information gathering and intelligence capabilities to prevent and detect the production of illicit drugs and explosives.

Source: <https://cordis.europa.eu/article/id/441968-a-stealth-sensor-network-locates-clandestine-drug-labs-and-explosives-makers> (Official European Union's Community Research and Development Information Service [CORDIS] website)

## PAKISTAN POLICE SERIOUS GAMING APPROACH FOR RAISING CLIMATE CHANGE AWARENESS

Pakistan National Police Bureau has partnered with COMSATS University Islamabad to improve climate change awareness through gamification. They used a game-based approach known as the Climate Fresk to create a participatory and active discussion on the emerging role of law enforcement agencies in the context of climate change. The Climate Fresk is a serious game based on collective intelligence and creativity which retraces the Intergovernmental Panel on Climate Change (IPCC)'s reasoning for a maximum time of three hours.

Some relevant conclusions that were drawn from the game session include the notably growing frequency of super floods and induced disasters, the rising link between jungle fires and arson or eco-terrorism, the continuous attention to climate-induced migration as a policing issue, and the overall disturbances and violence that these elements will entail and what will fall into the policing domain.

Mr. Umar Sheraz, Innovation Policy Analyst and Futurist from COMSATS University, facilitated the session and indicated that the most relevant result was 'the growing realization of the lack of preparation and the need to upgrade to tackle emerging issues'.

During the 11th STRATalks (Strategic Talks) Futures Series organized by the INTERPOL Innovation Centre in May 2022, participants were asked to discuss the implications of climate change for law enforcement. Among the findings, the lack of understanding of what climate change means concretely for law enforcement was highlighted, which was also identified as a relevant cause of the little sense of urgency about how climate change will affect law enforcement. During the STRATalks session, Pakistan National Police Bureau had the opportunity to discuss the consequences, challenges, and changes related to climate change that they foresee for their agency.





Source: to find more information on the 11th session of the STRATalks Futures Series about "Climate Change and its Implications for Law Enforcement" please visit the [INTERPOL GKH](#)

### DID YOU KNOW?

Policía Nacional (Spanish National Police) have seized underwater semi-submersible drones capable of carrying up to 200kgs of drugs attempting to cross the strait of Gibraltar. According to Policía Nacional, it was the first time they had encountered underwater drones being used for drug smuggling.

### WE INVITE QUALIFIED LAW ENFORCEMENT OFFICERS TO APPLY FOR THE FOLLOWING SECONDMENTS:

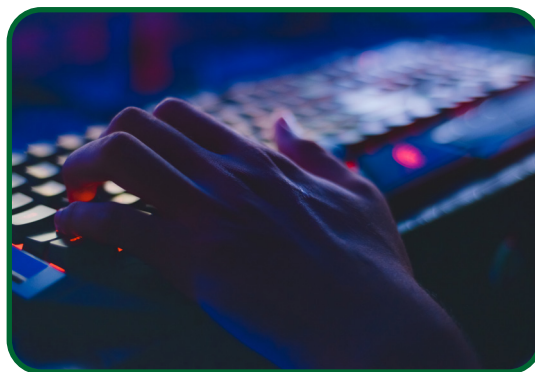
-  ASSISTANT DIRECTOR APPLIED INNOVATION ([apply](#))
-  HEAD OF FUTURES AND FORESIGHT LABORATORY ([apply](#))
-  DIGITAL CRIME ANALYST - 2 posts ([apply](#))
-  RESEARCH ANALYST ([apply](#))



If you or anyone you know from your police agencies are qualified for the positions, and your administration is willing to support your secondment (please read the document 'Conditions of Secondment for Officials'), do not hesitate to apply!

## TORLAB FOR LAW ENFORCEMENT TESTING AND TRAINING

Over the last year, Dutch research organization TNO, in partnership with INTERPOL's Innovation Centre Cyberspace and New Technologies Lab, has developed a simulator of the Tor network: the Tor lab. Tor, short for 'The Onion Router', is a free, open-source encrypted protocol that enables anonymous communication by concealing the user's identity and location. The system employs a series of layered nodes to hide online data, IP addresses, and browsing history. Deploying the Tor lab allows for safe explorations of a virtualized Tor network without the risks of being exposed to criminal activities or unwanted imagery. This makes the environment viable to be used by law enforcement agencies for training and demonstration purposes and testing interventions.



This product is based on a previous, physical version of a Tor simulation that used Raspberry Pi's. This version is virtualized using Docker containers to make the network scalable and expand its features. A complete yet small Tor network was built within the Docker environment, including all the different nodes that make up the regular Tor network.

There are directory authority nodes that contain the information regarding hidden services, guard nodes that allow users to enter the Tor network, and relay nodes that route all information through the network. Additionally, a few hidden services reside within this network, such as marketplaces and a Bitcoin network. Finally, an inspector application shows detailed information about the current state of this virtual Tor network, which can be used for a more in-depth analysis of the inner working of the Tor protocol.

More information about Tor lab is available for law enforcement agencies through INTERPOL's Innovation Centre ([cntl@interpol.int](mailto:cntl@interpol.int))

### INNOVATION CENTRE EVENTS

7TH DIGITAL  
FORENSICS EXPERT  
GROUP MEETING

08/11-10/11 INDIA

NEW TECH. FORUM:  
LAW ENFORCEMENT  
IN WEB 3.0

15/11 - 17/11 SINGAPORE

MULTIMEDIA  
FORENSICS

17/11 VIRTUAL TRAINING

*For more information,  
please contact the  
INTERPOL Innovation Centre  
[innovation@interpol.int](mailto:innovation@interpol.int)*

### DID YOU KNOW?

Suffolk Police in the United Kingdom have successfully launched a pilot for a new live chat system to support victims of domestic abuse. Thanks to the use of multiple safety functions, such as a quick exit button that diverts the page to a typical news website without leaving any trace in the device's history, this new software supports domestic abuse victims to safely contact police officers to get assistance.

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