BORDERSENS

Border detection of illicit drugs and precursors by highly accurate electrosensors.

BorderSens aims at developing key enabling technologies to be used at the borders by custom control authorities and police forces to **quickly and accurately detect illicit drugs and precursors** entering the EU countries.

The portable, wireless single prototype device thus obtained will be evaluated at 7 EU customs borders by end-users, and exploitation plans guaranteeing strong impact will be developed and implemented.

BORDERSENS

BorderSens project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 833787

Borders are important gateways for the entrance of illicit drugs and their precursors. Current on-site testing for illegal substances is in general a two-tiered system starting with fast and simple preliminary screening tests, followed by confirmatory testing in the lab with analytical instrumentation. At the screening step, which is most often crime scene connected or during drug trafficking, **accurate and fast results are of the utmost importance** as this is the moment when immediate action against the suspects is possible. Waiting for laboratory confirmation is often too time consuming and, therefore, on-the-spot action becomes problematic or impossible. As a consequence, there is a growing demand for accurate and precise detecting methods that can be used for on-site reliable analysis.

TECHNOLOGY

The ultimate research aim of BorderSens project is to develop a low-cost user-friendly portable prototype device for drug detection on-site, capable of testing for different types of drugs, precursors and adulterants/cutting agents, and delivering results within 45 seconds, with outstanding accuracy and reduced false positives and false negatives. This innovative platform will combine electrochemical research with strategies to unravel and enrich the fingerprint, the development of selective nano-Molecularly Imprinted Polymers (nanoMIPs) and nanomaterials, and advanced data analysis.

THE CONSORTIUM

The consortium represents 16 partners from 8 EU member states: Belgium, the Netherlands, Spain, the United Kingdom, Sweden, Luxembourg, Lithuania, and Romania. It holds **4 universities**: University of Antwerp, University of Leicester, Iuliu Hațieganu University of Medicine and Pharmacy Cluj-Napoca, and Autonomous University of Barcelona; **2 companies**: Metrohm DropSens and Izertis, and **10 Border Authorities, police forces and national forensic institutes**: National Institute of Criminalistics and Criminology (NICC), General Inspectorate of Romanian Police, Dutch Customs Laboratory, Scottish Police Authority, Belgian Customs - Port of Antwerp and Zaventem Airport, Swedish Customs, General Inspectorate of Romanian Border Police, Luxembourg Police Grand-Ducale, Customs Criminal Service Lithuania, and Home Office - Border Force.

This wide geographical spread, with each country corresponding to different key drug targets and trafficking routes, guarantees end-user input collected in terms of drug detection needs is relevant for the EU as a whole and has maximal relevance in the field for border control and increased border security.

Keep in touch!

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